2006 Management Practice Checklist Update Summary Report

June 2007

State of California
REGIONAL WATER QUALITY CONTROL BOARD
Central Coast Region (3)

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Introduction

The purpose of the 2006 Management Practice Checklist Update Report (2006 update report) is to summarize water quality management practice implementation reported by irrigated commercial farming operations (growers) in the Central Coast Region. Discharges from irrigated lands to surface and ground water are regulated in the Central Coast Region by the Conditional Wavier for Discharges from Irrigated Lands (conditional waiver), Order No. R3-2004-0117. The Central Coast Regional Water Quality Control Board (Water Board) adopted the conditional waiver on July 9, 2004, for a five-year cycle.

Upon enrollment, growers are required to submit a management practice checklist (checklist). In addition, growers must submit an update of the checklist at least once during the five-year cycle of the conditional waiver. The checklist is a short questionnaire that allows growers to identify planned or implemented farm water quality management practices. All enrolled growers were required to submit updated checklists by January 1, 2007. The checklist is included as Appendix A.

Methods

Determining Goals for the Checklist

One of the initial steps in the planning process for the checklist was to establish its goals. Some goals were outlined in the conditional waiver while others were outlined by Water Board staff. Additional goals were submitted by interested parties such as education and outreach coordinators and growers. A summary of the checklist goals is listed below.

Checklist Goals for the Conditional Waiver

- Establish the management practice checklist as a short questionnaire that allows the grower to identify management practices that are being planned and/or implemented for water quality protection.
- Allow growers to add practices that are known to or are likely to have a water quality benefit.
- Use the checklist to assess whether practices need to be adjusted or increased based on where water quality problems have been identified.

Checklist Goals from Water Board Staff

- Document management practices at the site level (e.g., ranches and farms) so that relationships between management practices and water quality can be examined.
- Make the checklist form easy to use and submit.
- Track management practices that benefit water quality and are applicable to irrigated agriculture in the Central Coast Region.

- Identify where to focus future outreach.
- Document progress towards achieving a Regional Water Quality Control Board long-term goal that, by 2025, 80% of the land within any watershed is properly managed to support a healthy functioning watershed, with the remaining 20% achieving positive trends.

Checklist Goals from Interested Parties

- Determine the amount of management practice implementation throughout the region and in the various counties and major watersheds.
- Make the checklist available to non-English speakers.

Developing the Management Practice Checklist

The practice reporting form was designed to determine the level of implementation for four types of farm water quality management practices: pesticide management, irrigation water management, erosion and sediment management, and nutrient management. Checklist questions were directed at the grower/operation level so that growers could submit only one checklist for their entire operation and not for each ranch site. This was done to simplify the submittal process for growers and the processing time for staff.

Delivering and Submitting the Checklist

On December 5, 2006, checklists were mailed to 1,775 enrolled growers who represent approximately 400,000 commercially irrigated acres in the Central Coast Region. The submittal due date was previously established in the conditional waiver as January 1, 2007. However, for inclusion in this report, late submittals were accepted until January 18, 2007.

Data Tabulation

The checklist responses submitted to the Water Board were entered into an Access database along with the growers' Conditional Waiver enrollment records. Database tables were queried and the results exported to Excel spreadsheets for processing into tables and graphs presented in this report.

Reporting the Results

The results of the checklist were processed into two primary formats. The first was by percent of responding growers and the second was by percent of represented acres.

Percent of Responding Growers

The percent of responding growers was defined as the number of grower responses at a particular type of implementation, divided by the total number of responding growers, multiplied by 100. For example, 1,040 growers responded by submitting a checklist. Of these, 771 growers implemented an Integrated Pest Management Program (question

P_1). Therefore, 74.1% of responding growers had implemented an Integrated Pest Management Program.

The growers were also separated into groups based on the major crop type farmed. Some growers farmed more than one crop type; in this situation the major crop type was establish as the one reported with the largest acreage.

Represented Acreage
The represented acreage was defined as the crop acreage farmed by growers who responded to the checklist. For example, a grower who responded to question P_1 of the checklist that they had implemented an Integrated Pest Management Program (IPM) and farms 100 acres of vineyard and 50 acres of row crops would have 150 represented acres as having IPM implemented.

Percent of Represented Acreage
The percent of represented acreage was defined as the represented acreage at a particular level of implementation divided by the total represented acreage times 100. For example, in question P_1, the total represented row crop acreage for the Central Coast Region is 287,533 and the implemented represented row crop acreage is 165,744, which represents 90.8% of the represented crop acreage.

Survey Limitations

This report presents the number and percentage of growers who responded to the checklist. It also presents the represented acreage of the grower. It does not present the actual acreage of implementation affected by a management practice.

Factors limiting the accuracy of the data include:

- The actual acreage for each type of response is difficult to capture using a self-reporting checklist because the checklist asked growers the level of implementation for each management practice, not the amount of acreage associated with each level of implementation.
- The actual acreage implemented is likely significantly less than the represented acreage that was recorded in this report due to most practices not being implemented across the entire operation. Also, the checklist responses were for the entire operation and did not assess implementation on an individual ranch level.
- The checklist was a self-assessment survey; the responses may vary based on the growers' interpretation of the questions and understanding of the management practices.
- The crop data for each grower was reported at the time the grower enrolled and acreage may have changed from the time of enrollment to the time when the checklist was completed. It was estimated that this was not a significant amount of error because of an acreage update for all growers collected two months prior to the checklist.

Results

This report presents the results of the checklist in two broad categories. One is by the represented crop acreage in the major counties in the region and the entire region. The other is by the responses and represented acreage for each management practice.

Represented Crop Acreage in Major Counties and Entire Region

The county with greatest total represented crop acreage was Monterey County with 147,351 acres (refer to Table 1). 71% of the crop acreage in Monterey County was reported as row crop. In the entire region the largest percentage of represented crop acreage was row crop at 66% followed by vineyard at 28% (refer to Figure 1).

Table 1
Represented Crop Acreage by Major Counties and Region Totals

	Row Crop		Orchard		Vineyard		Nursery		Greenhouse		Other		Total	
County	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Monterey	104,330	71%	1,431	1%	41,499	28%	144	<1%	247	<1%	6,948	5%	147,651	100%
San Benito	16,030	86%	1,790	10%	701	4%	1	<1%	49	<1%	805	4%	18,571	100%
San Luis Obispo	7,700	28%	2,839	10%	16,780	60%	327	1%	92	<1%	3,496	13%	27,738	100%
Santa Barbara	32,074	58%	6,779	12%	15,648	28%	247	<1%	236	<1%	870	2%	54,984	100%
Santa Clara	3,921	71%	678	12%	785	14%	69	1%	57	1%	632	11%	5,510	100%
Santa Cruz	13,192	88%	1,314	9%	122	1%	161	1%	255	2%	827	5%	15,044	100%
Entire Region	177,247	66%	14,831	6%	75,535	28%	949	<1%	936	<1%	13,578	5%	269,498	100%

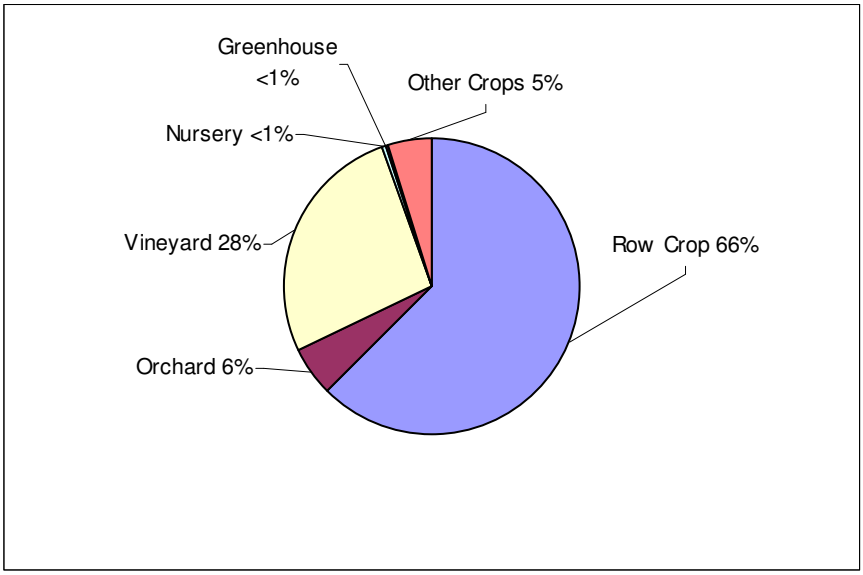

Figure 1: Percentage of represented crop acreage in the entire region.

Responses and Represented Acreage for each Management Practice Reported

The results in this section are organized in the same format as the questions were in the checklist (refer to Appendix A). The results are organized by four management practice categories: pesticide management, irrigation water management, erosion and sediment control management, and nutrient management. For each category, summary graphs show levels of implementation of each management practices for both responding growers and represented acreage (in percentage).

Pesticide Management

Pesticide management questions are listed below. The responses for all crop types to the individual questions follow in the summary graphs (refer to Figures 2 and 3). The responses by growers to each pesticide management question are outlined by major crop type along with the represented acreage.

Pesticide Management Questions

P_1) Is an integrated Pest Management program established?

P_2) Are pest populations assessed and pesticides applied based on scouting data, thresholds, and/or risk assessment models?

P_3) Are introduced or managed biological control agents utilized?

P_4) Does pesticide selection consider runoff or leaching potential?

P_5) Does pesticide selection consider toxicity to non-target organisms?

P_6) Is pesticide application equipment regularly inspected, maintained, and calibrated to ensure appropriate application rates and distributions?

P_7) Is yearly pesticide training provided for all pesticide handlers who apply, load, mix, transport, clean, and repair pesticide application equipment?

P_8) Do pesticide storage facilities have concrete pads and curbs for containment of spills?

P_9) Are pesticide mixing and loading areas located in such a manner to reduce the likelihood of a spill or overflow contaminating a water source?

P_10) Are production wells on elevated concrete bases upslope of pesticide storage and handling facilities?

P_11) Does wellhead protection consist of an elevated concrete seal, sump, or buffer area of 100' around the wellhead and a backflow prevention device?

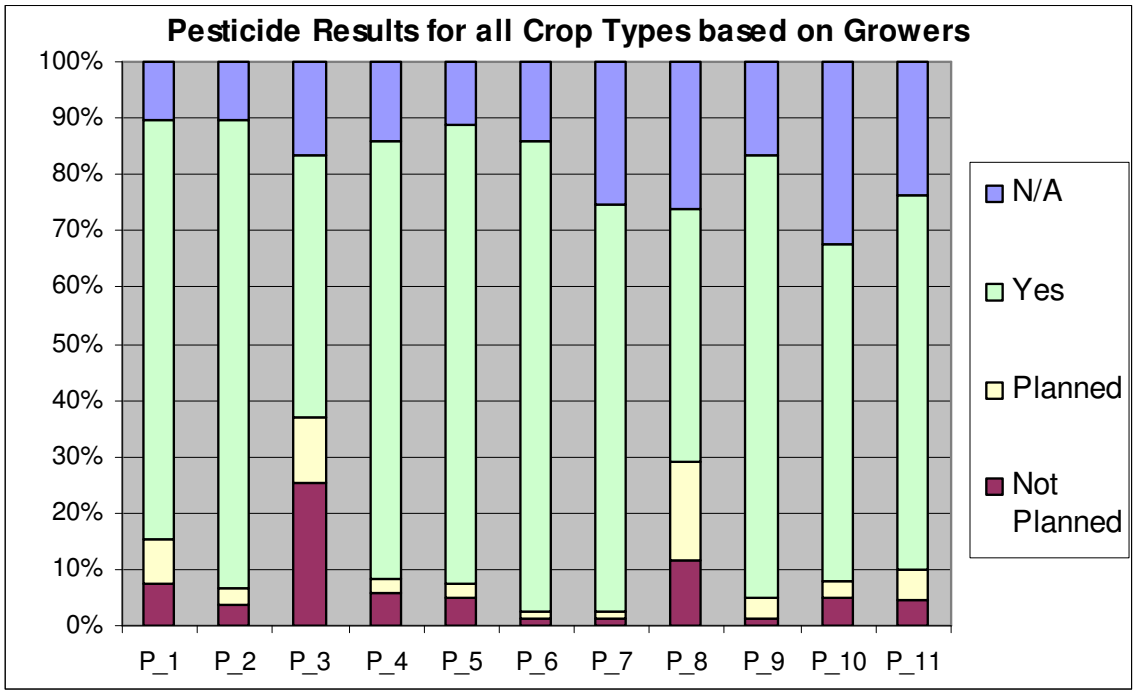

Figure 2: Level of implementation of pesticide management practices for all represented growers.

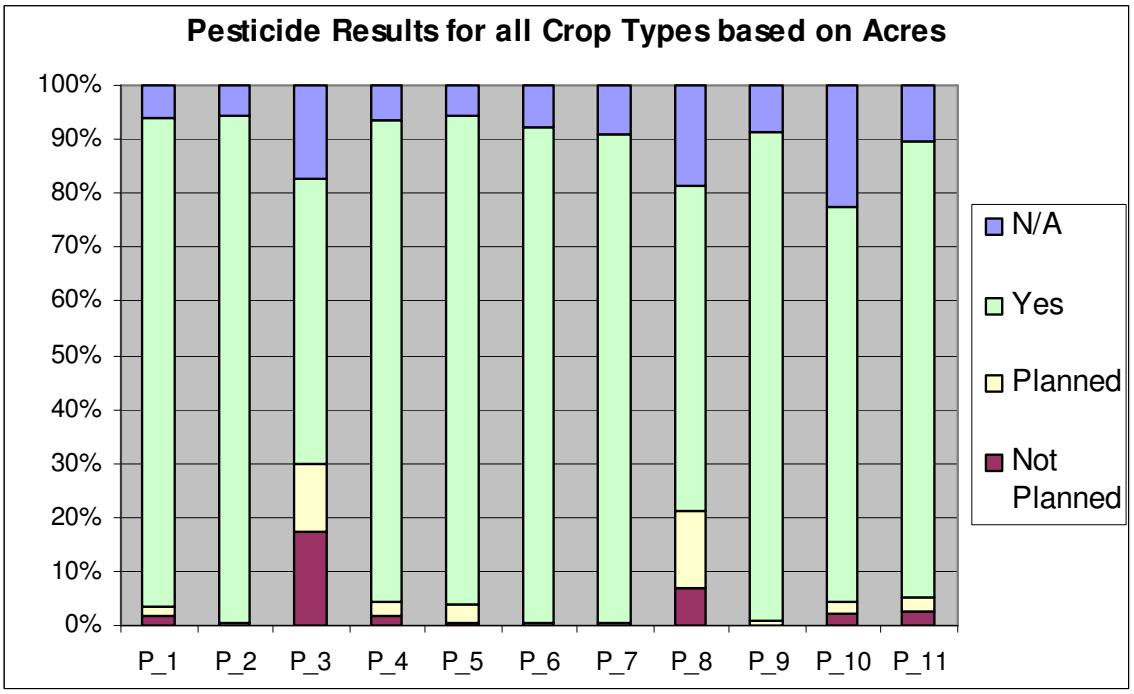

Figure 3: Level of implementation of pesticide management practices for all represented acres.

P_1) Is an Integrated Pest Management Program established?

Responding Growers for all Crop Types

- 74.1% (771 growers) have established an Integrated Pest Management Program.
- 7.8% (81 growers) plan implementation within three years.
- 7.6% (79 growers) do not plan to implement this practice.
- 10.5% (109 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	771	74.1	81	7.8	79	7.6	109	10.5	1,040	100
Row Crop	224	82.4	15	5.5	13	4.8	20	7.4	272	100
Orchard	168	65.9	25	9.8	26	10.2	36	14.1	255	100
Vineyard	224	77.8	27	9.4	14	4.9	23	8.0	288	100
Nursery	40	74.1	4	7.4	6	11.1	4	7.4	54	100
Greenhouse	34	64.1	3	5.7	5	9.4	11	20.8	53	100
Other	42	64.6	3	4.6	11	16.9	9	13.8	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 90.5% (260,078 acres) have established an Integrated Pest Management Program.
- Growers representing 1.5% (4,332 acres) plan implementation within three years.
- Growers representing 1.8% (5,305 acres) do not plan to implement this practice.
- Growers representing 6.2% (17,818 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	260,078	90.5	4,332	1.5	5,305	1.8	17,818	6.2	287,533	100
Row Crop	165,744	90.8	1980	1.1	5,636	3.1	9163	5.0	182,523	100
Orchard	13,914	84.5	1221	7.4	559	3.4	781	4.7	16,475	100
Vineyard	72,884	90.0	701	0.9	244	0.3	7157	8.8	80,986	100
Nursery	841	84.1	76	7.6	65	6.5	18	1.8	1,000	100
Greenhouse	803	81.7	36	3.7	79	8.0	65	6.6	983	100
Other	14,039	92.8	351	2.3	289	1.9	454	3.0	15,133	100

P_2) Are pest populations assessed and pesticides applied based on scouting data, thresholds, and/or risk assessment models?

Responding Growers for all Crop Types

- 83.1% (864 growers) assess pest populations and apply pesticides based on scouting data, thresholds, and/or risk assessment models.
- 2.7% (28 growers) plan implementation within three years.
- 3.8% (39 growers) do not plan to implement this practice.
- 10.5% (109 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	864	83.1	28	2.7	39	3.8	109	10.5	1,040	100
Row Crop	234	86.0	8	2.9	4	1.5	26	9.6	272	100
Orchard	198	77.6	4	1.6	15	5.9	38	14.9	255	100
Vineyard	254	88.2	8	2.8	9	3.1	17	5.9	288	100
Nursery	45	83.3	1	1.9	4	7.4	4	7.4	54	100
Greenhouse	42	79.2	3	5.7	1	1.9	7	13.2	53	100
Other	50	76.9	1	1.5	2	3.1	12	18.5	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 93.9% (270,076 acres) assess pest populations and apply pesticides based on scouting data, thresholds, and/or risk assessment models.
- Growers representing 0.4% (1,154 acres) plan implementation within three years.
- Growers representing 0.2% (504 acres) do not plan to implement this practice.
- Growers representing 5.5% (15,799 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	270,076	93.9	1,154	0.4	504	0.2	15,799	5.5	287,533	100
Row Crop	173,686	95.2	884	0.5	238	0.1	7,715	4.2	182,523	100
Orchard	15,499	94.1	194	1.2	158	0.9	624	3.8	16,475	100
Vineyard	73,637	90.9	106	0.1	58	0.01	7,185	8.9	80,986	100
Nursery	928	92.8	3	0.3	50	5.0	19	1.9	1,000	100
Greenhouse	919	93.5	39	5.0	8	0.8	17	1.7	983	100
Other	14,657	96.9	14	0.09	13	0.09	449	3.0	15,133	100

P_3) Are introduced or managed biological control agents utilized?

Responding Growers for all Crop Types

- 46.3% (481 growers) utilize introduced or managed biological control agents.
- 11.9% (124 growers) plan implementation within three years.
- 25.2% (262 growers) do not plan to implement this practice.
- 16.6% (173 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	481	46.3	124	11.9	262	25.2	173	16.6	1,040	100
Row Crop	138	50.7	28	10.3	62	22.8	44	16.2	272	100
Orchard	107	41.9	30	11.8	65	25.5	53	20.8	255	100
Vineyard	131	45.5	44	15.3	73	25.3	40	13.9	288	100
Nursery	27	50.0	6	11.1	14	25.9	7	13.0	54	100
Greenhouse	22	41.5	6	11.3	15	28.3	10	18.9	53	100
Other	28	43.1	5	7.7	17	26.1	15	23.1	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 52.9% (152,075 acres) utilize introduced or managed biological control agents.
- Growers representing 12.5% (36,017 acres) plan implementation within three years.
- Growers representing 17.4% (50,046 acres) do not plan to implement this practice.
- Growers representing 17.2% (49,395 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	152,075	52.9	36017	12.5	50,046	17.4	49,395	17.2	287,533	100
Row Crop	112,215	61.5	16125	8.8	31,759	17.4	22424	12.3	182,523	100
Orchard	8,855	53.7	2236	13.6	3,412	20.7	1972	12.0	16,475	100
Vineyard	25,537	31.5	17314	21.4	13,337	16.5	24798	30.6	80,986	100
Nursery	435	43.5	239	23.9	223	22.3	103	10.3	1,000	100
Greenhouse	673	53.7	34	2.7	242	19.3	304	24.3	983	100
Other	11,995	79.2	783	5.2	1,388	9.2	967	6.4	15,133	100

P_4) Does pesticide selection consider runoff or leaching potential?

Responding Growers for all Crop Types

- 77.6% (807 growers) consider runoff or leaching potential with pesticide selection.
- 2.4% (25 growers) plan implementation within three years.
- 5.7% (59 growers) do not plan to implement this practice.
- 14.3% (149 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	807	77.6	25	2.4	59	5.7	149	14.3	1,040	100
Row Crop	218	80.2	11	4.0	9	3.3	34	12.5	272	100
Orchard	183	71.8	5	2.0	15	5.8	52	20.4	255	100
Vineyard	241	83.7	6	2.1	20	6.9	21	7.3	288	100
Nursery	45	83.3	0	0.0	3	5.6	6	11.1	54	100
Greenhouse	32	60.4	2	3.8	6	11.3	13	24.5	53	100
Other	47	72.3	1	1.5	5	7.7	12	18.5	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 89.2% (256,520 acres) consider runoff or leaching potential with pesticide selection.
- Growers representing 2.6% (7,694 acres) plan implementation within three years.
- Growers representing 1.7% (4,897 acres) do not plan to implement this practice.
- Growers representing 6.4% (18,422 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	256,520	89.2	7,694	2.6	4,897	1.7	18,422	6.4	287,533	100
Row Crop	162,043	88.8	6,364	3.5	3,890	2.1	10,226	5.6	182,523	100
Orchard	14,922	90.6	287	1.7	225	1.4	1,041	6.3	16,475	100
Vineyard	72,801	89.9	679	0.8	556	0.7	6,950	8.6	80,986	100
Nursery	915	91.5	4	0.4	37	3.7	44	4.4	1,000	100
Greenhouse	790	80.4	6	0.6	49	5.0	138	14.0	983	100
Other	14,290	94.4	273	1.8	148	1.0	422	2.8	15,133	100

P_5) Does pesticide selection consider toxicity to non-target organisms?

Responding Growers for all Crop Types

- 81.2% (844 growers) consider toxicity to non-target organisms with pesticide selection.
- 2.5% (26 growers) plan implementation within three years.
- 5.0% (52 growers) do not plan to implement this practice.
- 11.3% (118 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	844	81.2	26	2.5	52	5.0	118	11.3	1,040	100
Row Crop	231	84.9	11	4.0	7	2.6	23	8.5	272	100
Orchard	198	77.6	1	0.4	11	4.3	45	17.7	255	100
Vineyard	246	85.4	8	2.8	18	6.3	16	5.5	288	100
Nursery	45	83.3	1	1.9	3	5.6	5	9.2	54	100
Greenhouse	30	56.6	3	5.6	10	18.9	10	18.9	53	100
Other	51	78.5	1	1.5	2	3.1	11	16.9	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 90.3% (259,779 acres) consider toxicity to non-target organisms with pesticide selection.
- Growers representing 3.5% (10,134 acres) plan implementation within three years.
- Growers representing 0.5% (1,300 acres) do not plan to implement this practice.
- Growers representing 5.7% (16,320 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	259,779	90.3	10,134	3.5	1,300	0.5	16,320	5.7	287,533	100
Row Crop	163,698	89.7	9,920	5.4	538	0.3	8,367	4.6	182,523	100
Orchard	15,476	93.9	35	0.2	173	1.1	791	4.8	16,475	100
Vineyard	73,455	90.7	145	0.2	512	0.6	6,874	8.5	80,986	100
Nursery	916	91.6	20	2.0	35	3.5	29	2.9	1,000	100
Greenhouse	859	87.4	11	1.1	70	7.1	43	4.4	983	100
Other	14,766	97.6	37	0.2	17	0.1	313	2.1	15,133	100

P_6) Is pesticide application equipment regularly inspected, maintained, and calibrated to ensure appropriate application rates and distribution?

Responding Growers for all Crop Types

- 83.4% (867 growers) regularly inspect, maintain, and calibrate pesticide application equipment to ensure appropriate application.
- 1.3% (14 growers) plan implementation within three years.
- 1.3% (13 growers) do not plan to implement this practice.
- 14.0% (146 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	867	83.4	14	1.3	13	1.3	146	14.0	1,040	100
Row Crop	232	85.3	4	1.5	1	0.4	35	12.8	272	100
Orchard	183	71.8	4	1.6	6	2.4	62	24.2	255	100
Vineyard	264	91.7	5	1.7	3	1.0	16	5.6	288	100
Nursery	46	85.2	0	0.0	2	3.7	6	11.1	54	100
Greenhouse	47	88.7	0	0.0	0	0.0	6	11.3	53	100
Other	51	78.5	1	1.5	1	1.5	12	18.5	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 91.9% (264,171 acres) regularly inspect, maintain, and calibrate pesticide application equipment to ensure appropriate application.
- Growers representing 0.2% (548 acres) plan implementation within three years.
- Growers representing 0.04% (132 acres) do not plan to implement this practice.
- Growers representing 7.9% (22,682 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	264,171	91.9	548	0.2	132	0.04	22,682	7.9	287,533	100
Row Crop	167,791	91.9	348	0.2	14	0.008	14,370	7.9	182,523	100
Orchard	15,159	92.0	154	0.9	68	0.4	1,094	6.7	16,475	100
Vineyard	74,030	91.4	84	0.1	11	0.01	6,861	8.5	80,986	100
Nursery	936	93.6	0	0.0	29	2.9	35	3.5	1,000	100
Greenhouse	956	97.3	6	0.6	6	0.6	15	1.5	983	100
Other	14,607	96.5	12	0.08	6	0.04	508	3.4	15,133	100

P_7) Is yearly pesticide training provided for all pesticide handlers who apply, load, mix, transport, clean, and repair pesticide application equipment?

Responding Growers for all Crop Types

- 72.4% (753 growers) provide yearly pesticide training for all pesticide handlers.
- 1.1% (11 growers) plan implementation within three years.
- 1.3% (14 growers) do not plan to implement this practice.
- 25.2% (262 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	753	72.4	11	1.1	14	1.3	262	25.2	1,040	100
Row Crop	224	82.4	1	0.4	2	0.7	45	16.5	272	100
Orchard	144	56.4	3	1.2	6	2.4	102	40.0	255	100
Vineyard	224	77.8	4	1.4	3	1.0	57	19.8	288	100
Nursery	43	79.6	0	0.0	1	1.9	10	18.5	54	100
Greenhouse	45	84.9	1	1.9	0	0.0	7	13.2	53	100
Other	40	61.5	1	1.5	2	3.1	22	33.9	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 90.7% (260,818 acres) provide yearly pesticide training for all pesticide handlers.
- Growers representing 0.3% (767 acres) plan implementation within three years.
- Growers representing 0.1% (250 acres) do not plan to implement this practice.
- Growers representing 8.9% (25,698 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	260,818	90.7	767	0.3	250	0.09	25,698	8.9	287,533	100
Row Crop	166,522	91.2	200	0.1	21	0.01	15,780	8.6	182,523	100
Orchard	14,333	87.0	518	3.2	140	0.8	1,484	9.0	16,475	100
Vineyard	73,375	90.6	105	0.1	4	0.005	7,502	9.3	80,986	100
Nursery	932	93.2	0	0.0	24	2.4	44	4.4	1,000	100
Greenhouse	957	97.4	1	0.1	7	0.7	18	1.8	983	100
Other	13,719	90.7	32	0.2	77	0.5	1305	8.6	15,133	100

P_8) Do pesticide storage facilities have concrete pads and curbs for containment of spills?

Responding Growers for all Crop Types

- 44.6% (464 growers) have pesticide storage facilities with concrete pads and curbs for containment of spills.
- 17.5% (182 growers) plan implementation within three years.
- 11.7% (122 growers) do not plan to implement this practice.
- 26.2% (272 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	464	44.6	182	17.5	122	11.7	272	26.2	1,040	100
Row Crop	142	52.2	37	13.6	21	7.7	72	26.5	272	100
Orchard	94	36.9	36	14.1	33	12.9	92	36.1	255	100
Vineyard	137	47.6	58	20.1	31	10.8	62	21.5	288	100
Nursery	24	44.4	10	18.5	9	16.7	11	20.4	54	100
Greenhouse	25	47.2	14	26.4	8	15.1	6	11.3	53	100
Other	24	36.9	16	24.6	9	13.9	16	24.6	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 60.4% (173,649 acres) have pesticide storage facilities with concrete pads and curbs for containment of spills.
- Growers representing 14.4% (41,547 acres) plan implementation within three years.
- Growers representing 6.8% (19,461 acres) do not plan to implement this practice.
- Growers representing 18.4% (52,876 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	173,649	60.4	41,547	14.4	19,461	6.8	52,876	18.4	287,533	100
Row Crop	104,090	57.0	21,513	11.8	16,033	8.8	40,887	22.4	182,523	100
Orchard	7,990	48.5	4,488	27.2	1,885	11.5	2,112	12.8	16,475	100
Vineyard	53,503	66.1	12,763	15.8	4,556	5.5	10,164	12.6	80,986	100
Nursery	472	47.2	345	34.5	112	11.2	71	7.1	1,000	100
Greenhouse	460	46.8	384	39.1	116	11.8	23	2.3	983	100
Other	8,497	56.1	4,307	28.5	692	4.6	1,637	10.8	15,133	100

P_9) Are pesticide mixing and loading areas located in such a manner to reduce the likelihood of a spill or overflow contaminating a water source?

Responding Growers for all Crop Types

- 78.7% (818 growers) locate pesticide mixing and loading areas to reduce the likelihood of a spill or overflow contaminating a water source.
- 3.7% (39 growers) plan implementation within three years.
- 1.1% (11 growers) do not plan to implement this practice.
- 16.5% (172 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	818	78.7	39	3.7	11	1.1	172	16.5	1,040	100
Row Crop	220	80.9	5	1.8	1	0.4	46	16.9	272	100
Orchard	170	66.7	13	5.1	4	1.5	68	26.7	255	100
Vineyard	247	85.8	16	5.5	2	0.7	23	8.0	288	100
Nursery	43	79.6	1	1.9	2	3.7	8	14.8	54	100
Greenhouse	42	79.2	3	5.7	1	1.9	7	13.2	53	100
Other	52	80.0	1	1.5	1	1.5	11	17.0	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 90.1% (259,195 acres) locate pesticide mixing and loading areas to reduce the likelihood of a spill or overflow contaminating a water source.
- Growers representing 1.0% (2,856 acres) plan implementation within three years.
- Growers representing 0.07% (203 acres) do not plan to implement this practice.
- Growers representing 8.8% (25,279 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	259,195	90.1	2,856	1.0	203	0.07	25,279	8.8	287533	100
Row Crop	164,627	90.2	1,050	0.6	15	0.008	16,831	9.2	182,523	100
Orchard	14,458	87.8	790	4.8	64	0.4	1,163	7.1	16,475	100
Vineyard	73,029	90.2	955	1.2	86	0.1	6,916	8.5	80,986	100
Nursery	928	92.8	6	0.6	27	2.7	39	3.9	1,000	100
Greenhouse	789	80.3	71	7.2	8	0.8	115	11.7	983	100
Other	14,460	95.6	196	1.3	7	0.05	470	3.1	15,133	100

P_10) Are production wells on elevated concrete bases upslope of pesticide storage and handling facilities?

Responding Growers for all Crop Types

- 60.0% (624 growers) have production wells on elevated concrete bases upslope of pesticide storage and handling facilities.
- 2.8% (29 growers) plan implementation within three years.
- 4.9% (51 growers) do not plan to implement this practice.
- 32.3% (336 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	624	60.0	29	2.8	51	4.9	336	32.3	1,040	100
Row Crop	189	69.5	8	2.9	8	2.9	67	24.6	272	100
Orchard	116	45.5	6	2.4	10	3.9	123	48.2	255	100
Vineyard	181	62.8	12	4.2	24	8.3	71	24.7	288	100
Nursery	30	55.6	0	0.0	1	1.9	23	42.6	54	100
Greenhouse	39	73.6	3	5.7	2	3.8	9	17.0	53	100
Other	41	63.1	0	0.0	4	6.2	20	30.8	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 73.3% (210,873 acres) have production wells on elevated concrete bases upslope of pesticide storage and handling facilities.
- Growers representing 2.2% (6,198 acres) plan implementation within three years.
- Growers representing 2.2% (6,402 acres) do not plan to implement this practice.
- Growers representing 22.3% (64,060 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	210,873	73.3	6,198	2.2	6,402	2.2	64,060	22.3	287,533	100
Row Crop	143,432	78.6	1,527	0.8	3,080	1.7	34,484	18.9	182,523	100
Orchard	10,327	62.7	1,298	7.9	559	3.4	4,291	26.0	16,475	100
Vineyard	50,209	62.0	3,033	3.7	2,554	3.1	25,190	31.1	80,986	100
Nursery	594	59.4	7	0.7	181	18.1	218	21.8	1,000	100
Greenhouse	745	75.8	55	5.6	10	1.0	173	17.6	983	100
Other	12,959	85.6	1	0.007	186	1.2	1,987	13.1	15,133	100

P_11) Does wellhead protection consist of an elevated concrete seal, sump, or buffer area of 100' around the wellhead and a backflow prevention device?

Responding Growers for all Crop Types

- 66.3% (690 growers) provide wellhead protection through an elevated concrete seal, sump, or buffer area of 100' around the wellhead and a backflow prevention device.
- 5.4% (56 growers) plan implementation within three years.
- 4.5% (47 growers) do not plan to implement this practice.
- 23.8% (247 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	690	66.3	56	5.4	47	4.5	247	23.8	1,040	100
Row Crop	218	80.1	16	5.9	10	3.7	28	10.3	272	100
Orchard	125	49.0	9	3.5	14	5.5	107	42.0	255	100
Vineyard	205	71.2	18	6.3	14	4.9	51	17.7	288	100
Nursery	32	59.3	3	5.6	3	5.6	16	29.6	54	100
Greenhouse	38	71.7	4	7.5	0	0.0	11	20.8	53	100
Other	44	67.7	4	6.1	3	4.6	14	21.5	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 84.1% (241,680 acres) provide wellhead protection through an elevated concrete seal, sump, or buffer area of 100' around the wellhead and a backflow prevention device.
- Growers representing 2.8% (8,055 acres) plan implementation within three years.
- Growers representing 2.6% (7,493 acres) do not plan to implement this practice.
- Growers representing 10.5% (30,305 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	241,680	84.1	8,055	2.8	7,493	2.6	30,305	10.5	28,7533	100
Row Crop	161,752	88.6	5710	3.1	2,443	1.3	12618	6.9	182,523	100
Orchard	11,302	68.6	811	4.9	1,372	8.3	2990	18.1	16,475	100
Vineyard	60,582	74.8	1178	1.5	3,173	3.9	16053	19.8	80,986	100
Nursery	632	63.2	15	1.5	208	20.8	145	14.5	1,000	100
Greenhouse	789	80.3	51	5.2	17	1.7	126	12.8	983	100
Other	13,490	89.1	502	3.3	202	1.3	939	6.2	15,133	100

Irrigation Water Management

The questions for this section are listed below. The responses for all crop types to the individual questions follow in the summary graphs (refer to Figures 4 and 5). The responses by growers to each irrigation water management question are outlined by major crop type along with the represented acreage.

Irrigation Water Management Questions

I_1) Is drip irrigation distribution uniformity maximized and maintained through regular system equipment and system pressure maintenance?

I_2) Is sprinkler and micro-sprinkler irrigation distribution uniformity maximized and maintained through regular system pressure maintenance and water application during low wind conditions?

I_3) Is furrow and flood irrigation distribution uniformity maximized and maintained by either managing furrow lengths, installing surge irrigation valves, installing irrigation field ditches, or using alternate row irrigation?

I_4) Is your irrigation system design optimized by matching sprinkler nozzle/drip applicator flow rates to the infiltration rate of the soil?

I_5) Are measured or published evapo-transpiration data (CIMIS) used to determine crop water use?

I_6) Is the soil water-holding capacity known?

I_7) Are records kept for each crop irrigated? (Records include the date, amount of each irrigation water applied, and the source of water used.)

I_8) Have all irrigators who apply irrigation water and maintain irrigation systems received training?

I_9) Has an irrigation mobile lab system evaluation been completed and the system been adjusted accordingly?

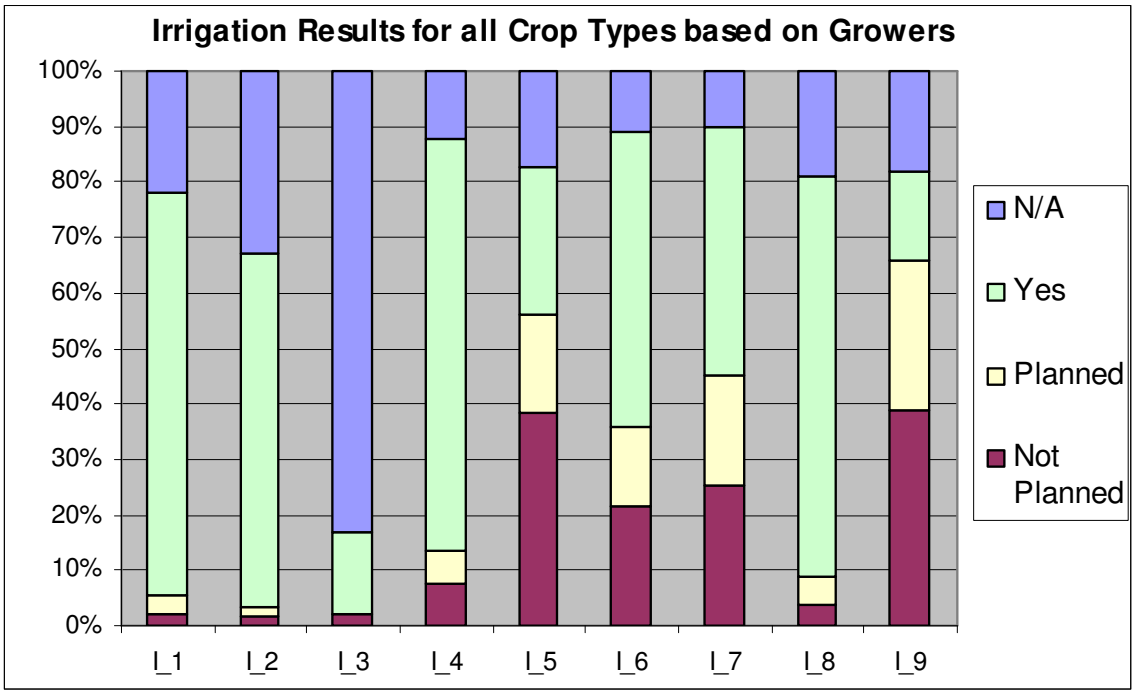

Figure 4: Level of implementation of irrigation water management practices for all represented growers.

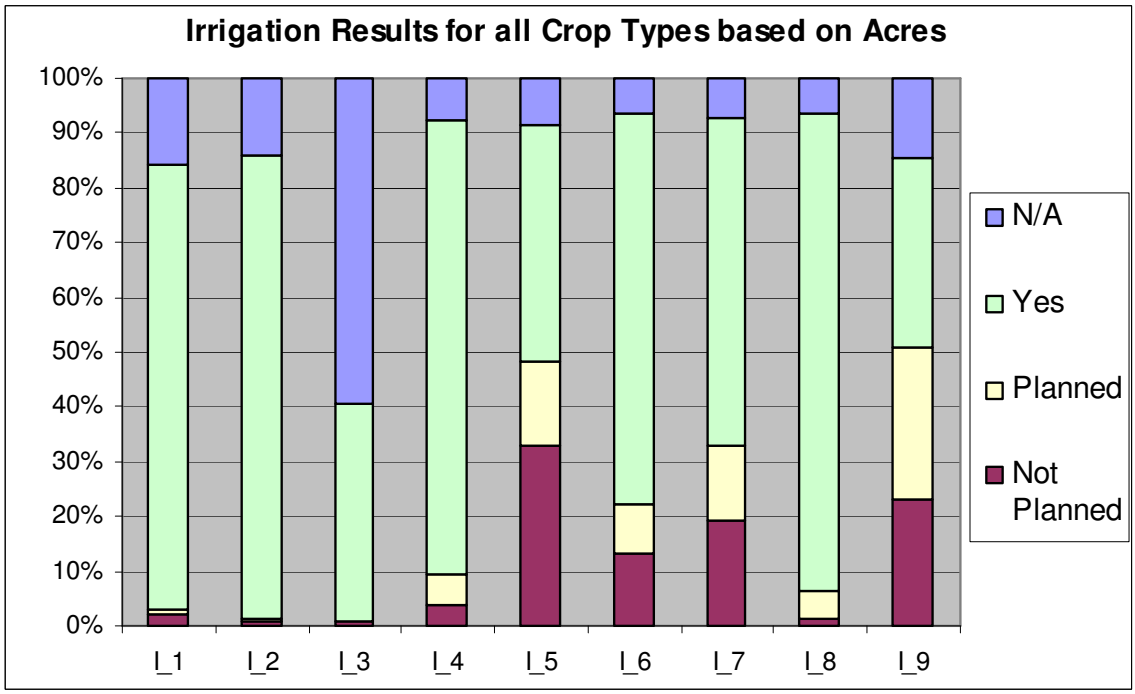

Figure 5: Level of implementation of irrigation water management practices for all represented acres.

I_1) Is drip irrigation distribution uniformity maximized and maintained through regular system equipment and system pressure maintenance?

Responding Growers for all Crop Types

- 72.7% (756 growers) maximize and maintain drip irrigation distribution uniformity.
- 3.2% (33 growers) plan implementation within three years.
- 2.2% (23 growers) do not plan to implement this practice.
- 21.9% (228 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	756	72.7	33	3.2	23	2.2	228	21.9	1,040	100
Row Crop	207	76.1	8	2.9	9	3.3	48	17.6	272	100
Orchard	145	56.9	9	3.5	7	2.7	94	36.9	255	100
Vineyard	264	91.7	11	3.8	1	0.3	12	4.2	288	100
Nursery	32	59.3	1	1.9	3	5.6	18	33.3	54	100
Greenhouse	34	64.2	1	1.9	1	1.9	17	32.1	53	100
Other	37	56.9	0	0.0	2	3.1	26	40.0	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 80.9% (232,732 acres) maximize and maintain drip irrigation distribution uniformity.
- Growers representing 1.1% (3,080 acres) plan implementation within three years.
- Growers representing 2.1% (6,022 acres) do not plan to implement this practice.
- Growers representing 15.9% (45,699 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	232,732	80.9	3,080	1.1	6,022	2.1	45,699	15.9	287,533	100
Row Crop	144,692	79.3	1,425	0.8	5,109	2.8	31,297	17.1	182,523	100
Orchard	10,819	65.7	871	5.3	391	2.4	4,394	26.7	16,475	100
Vineyard	72,848	90.0	864	1.1	181	0.2	7,093	8.8	80,986	100
Nursery	799	79.9	13	1.3	35	3.5	153	8.7	1,000	100
Greenhouse	756	76.9	5	0.5	57	5.8	165	16.8	983	100
Other	11,835	78.2	1	0.00006	249	1.6	3,048	20.1	15,133	100

I_2) Is sprinkler and micro-sprinkler irrigation distribution uniformity maximized and maintained through regular system pressure maintenance and water application during low wind conditions?

Responding Growers for all Crop Types

- 63.7% (662 growers) maximize and maintain sprinkler irrigation distribution uniformity.
- 2.0% (21 growers) plan implementation within three years.
- 1.5% (16 growers) do not plan to implement this practice.
- 32.8% (341 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	662	63.7	21	2.0	16	1.5	341	32.8	1,040	100
Row Crop	223	82.0	4	1.5	5	1.8	40	14.7	272	100
Orchard	204	80.0	10	3.9	2	0.8	39	15.3	255	100
Vineyard	99	34.4	1	0.3	4	1.4	184	63.9	288	100
Nursery	36	66.7	2	3.7	2	3.7	14	25.9	54	100
Greenhouse	33	62.3	1	1.9	1	1.9	18	34.0	53	100
Other	40	61.5	3	4.6	1	1.5	21	32.3	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 84.6% (243,349 acres) maximize and maintain sprinkler irrigation distribution uniformity.
- Growers representing 0.4% (1,087 acres) plan implementation within three years.
- Growers representing 1.0% (2,822 acres) do not plan to implement this practice.
- Growers representing 14.0% (40,275 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	243,349	84.6	1,087	0.4	2,822	1.0	40,275	14.0	287,533	100
Row Crop	168,525	92.3	467	0.3	1,742	1.0	11,789	6.5	182,523	100
Orchard	14,259	86.5	554	3.4	101	0.6	1,561	9.5	16,475	100
Vineyard	53,489	66.0	21	0.02	893	1.1	26,583	32.8	80,986	100
Nursery	770	77.0	30	3.0	31	3.1	169	16.9	1,000	100
Greenhouse	838	85.2	10	1.0	17	1.8	118	12.0	983	100
Other	13,121	86.7	58	0.4	17	0.1	1,937	12.8	15,133	100

I_3) Is furrow irrigation distribution uniformity maximized and maintained by either managing furrow lengths, installing surge irrigation valves, installing irrigation field ditches, or using alternate row irrigation?

Responding Growers for all Crop Types

- 14.4% (150 growers) maximize and maintain furrow irrigation distribution uniformity.
- 0.3% (3 growers) plan implementation within three years.
- 2.0% (21 growers) do not plan to implement this practice.
- 83.3% (866 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	150	14.4	3	0.3	21	2.0	866	83.3	1,040	100
Row Crop	119	43.8	2	0.7	5	1.8	146	53.7	272	100
Orchard	10	3.9	0	0.0	6	2.4	239	93.7	255	100
Vineyard	7	2.4	1	0.3	4	1.4	276	95.8	288	100
Nursery	1	1.9	0	0.0	2	3.7	51	94.4	54	100
Greenhouse	4	7.5	0	0.0	1	1.9	48	90.6	53	100
Other	7	10.8	0	0.0	2	3.1	56	86.2	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 39.8% (114,423 acres) maximize and maintain furrow irrigation distribution uniformity.
- Growers representing 0.02% (54 acres) plan implementation within three years.
- Growers representing 0.8% (2,232 acres) do not plan to implement this practice.
- Growers representing 59.4% (170,824 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	114,423	39.8	54	0.02	2,232	0.8	170,824	59.4	28,533	100
Row Crop	116,451	63.8	43	0.02	1,324	0.7	64,705	35.4	182,523	100
Orchard	1,075	6.5	0	0.0	407	2.5	14,993	91.0	16,475	100
Vineyard	480	0.6	16	0.02	245	0.3	80,245	99.1	80,986	100
Nursery	42	4.2	0	0.0	28	2.8	930	93.0	1,000	100
Greenhouse	26	6.8	0	0.0	15	3.9	342	89.3	983	100
Other	2,165	14.3	0	0.0	190	1.3	12778	84.4	15,133	100

I_4) Is your irrigation system design optimized by matching sprinkler nozzle/drip applicator flow rates to the infiltration rate of the soil?

Responding Growers for all Crop Types

- 74.3% (773 growers) optimize irrigation system design by matching sprinkler nozzle/drip flow rates with infiltration rate of the soil.
- 6.1% (63 growers) plan implementation within three years.
- 7.5% (78 growers) do not plan to implement this practice.
- 12.1% (126 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	773	74.3	63	6.1	78	7.5	126	12.1	1,040	100
Row Crop	217	79.8	21	7.7	15	5.5	19	7.0	272	100
Orchard	195	76.5	19	7.5	24	9.4	17	6.7	255	100
Vineyard	226	78.5	15	5.2	19	6.6	28	9.7	288	100
Nursery	25	46.3	5	9.2	5	9.3	19	35.2	54	100
Greenhouse	29	54.7	0	0.0	4	7.5	20	37.7	53	100
Other	47	72.3	2	3.1	6	9.2	10	15.4	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 82.7% (237,884 acres) optimize irrigation system design by matching sprinkler nozzle/drip flow rates with infiltration rate of the soil.
- Growers representing 5.6% (16,003 acres) plan implementation within three years.
- Growers representing 3.9% (11,277 acres) do not plan to implement this practice.
- Growers representing 7.8% (22,369 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	237,884	82.7	16,003	5.6	11,277	3.9	22,369	7.8	287,533	100
Row Crop	158,225	86.7	7,549	4.1	7,897	4.3	8,852	4.8	182,523	100
Orchard	12,436	75.5	1,276	7.7	2,207	13.4	556	3.3	16,475	100
Vineyard	59,400	73.3	7,414	9.2	2,472	3.1	11,700	14.4	80,986	100
Nursery	653	65.3	58	5.8	76	7.6	213	21.3	1,000	100
Greenhouse	549	55.8	24	2.4	56	5.7	354	36.0	983	100
Other	13,713	90.6	118	0.8	206	1.4	1,096	7.2	15,133	100

I_5) Are measured or published evapo-transpiration data (CIMIS) used to determine crop water use?

Responding Growers for all Crop Types

- 26.3% (273 growers) use measured or published evapo-transpiration data to determine crop water use.
- 17.7% (184 growers) plan implementation within three years.
- 38.6% (402 growers) do not plan to implement this practice.
- 17.4% (181 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	273	26.3	184	17.7	402	38.6	181	17.4	1,040	100
Row Crop	64	23.5	56	20.6	115	42.3	37	13.6	272	100
Orchard	61	23.9	47	18.4	110	43.1	37	14.5	255	100
Vineyard	120	41.7	49	17.0	91	31.6	28	9.7	288	100
Nursery	3	5.6	6	11.1	20	37.0	25	46.3	54	100
Greenhouse	2	3.8	6	11.3	20	37.7	25	47.2	53	100
Other	9	13.8	14	21.5	27	41.5	15	23.1	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 42.9% (123,443 acres) use measured or published evapo-transpiration data to determine crop water use.
- Growers representing 15.5% (44,437 acres) plan implementation within three years.
- Growers representing 33.0% (94,884 acres) do not plan to implement this practice.
- Growers representing 8.6% (24,769 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	123,443	42.9	44,437	15.5	94,884	33.0	24,769	8.6	287,533	100
Row Crop	49,960	27.4	31,456	17.2	86,323	47.3	14,784	8.1	182,523	100
Orchard	5,582	33.9	2,347	14.2	7,281	44.2	1,265	7.7	16,475	100
Vineyard	64,872	80.1	4,325	5.3	4,374	5.4	7,415	9.2	80,986	100
Nursery	250	25.0	108	10.8	272	27.2	370	37.0	1,000	100
Greenhouse	34	3.5	156	15.9	511	52.0	282	28.7	983	100
Other	4,725	31.2	5,298	35.0	3,889	25.7	1,221	8.1	15,133	100

I_6) Is the soil water-holding capacity known?

Responding Growers for all Crop Types

- 53.3% (554 growers) know the soil water-holding capacity.
- 14.4% (150 growers) plan implementation within three years.
- 21.5% (224 growers) do not plan to implement this practice.
- 10.8% (112 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	554	53.3	150	14.4	224	21.5	112	10.8	1,040	100
Row Crop	141	51.8	44	16.2	65	23.9	22	8.1	272	100
Orchard	119	46.7	44	17.3	74	29.0	18	7.1	255	100
Vineyard	204	70.8	33	11.5	43	14.9	8	2.8	288	100
Nursery	19	35.2	5	9.3	8	14.8	22	40.7	54	100
Greenhouse	14	26.4	3	5.7	12	22.6	24	45.3	53	100
Other	32	49.2	13	20.0	12	18.5	8	12.3	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 71.2% (204,841 acres) know the soil water-holding capacity.
- Growers representing 8.9% (25,682 acres) plan implementation within three years.
- Growers representing 13.4% (38,519 acres) do not plan to implement this practice.
- Growers representing 6.4% (18,491 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	204,841	71.2	25,682	8.9	38,519	13.4	18,491	6.4	287,533	100
Row Crop	115,738	63.4	20,999	11.5	35,843	19.6	9,943	5.4	182,523	100
Orchard	8,313	50.5	2,557	15.5	4,832	29.3	773	4.7	16,475	100
Vineyard	71,339	88.1	1,997	2.5	934	1.2	6,716	8.3	80,986	100
Nursery	487	48.7	91	9.1	159	15.9	263	26.3	1,000	100
Greenhouse	283	28.8	79	8.0	262	26.6	359	36.5	983	100
Other	11,624	76.8	1,648	10.9	944	6.2	917	6.1	15,133	100

I_7) Are records kept for each crop irrigated? (Records include the date, amount of each irrigation water applied, and the source of water used)

Responding Growers for all Crop Types

- 44.9% (467 growers) keep records for each crop irrigated.
- 19.6% (204 growers) plan implementation within three years.
- 25.5% (265 growers) do not plan to implement this practice.
- 10.0% (104 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	467	44.9	204	19.6	265	25.5	104	10.0	1,040	100
Row Crop	102	37.5	73	26.8	74	27.2	23	8.5	272	100
Orchard	116	45.5	47	18.4	72	28.2	20	7.8	255	100
Vineyard	180	62.5	51	17.7	46	16.0	11	3.8	288	100
Nursery	5	9.3	8	14.8	23	42.6	18	33.3	54	100
Greenhouse	15	28.3	8	15.1	17	32.1	13	24.5	53	100
Other	24	36.9	10	15.4	21	32.3	10	15.4	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 59.9% (172,254 acres) keep records for each crop irrigated.
- Growers representing 13.5% (38,769 acres) plan implementation within three years.
- Growers representing 19.4% (55,848 acres) do not plan to implement this practice.
- Growers representing 7.2% (20,662 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	172,254	59.9	38,769	13.5	55,848	19.4	20,662	7.2	287,533	100
Row Crop	92,421	38.1	90,152	37.2	47,800	19.7	12,150	5.0	182,523	100
Orchard	9414	57.1	2,862	17.4	3,617	22.0	582	3.5	16,475	100
Vineyard	66,477	82.1	4,680	5.8	3,052	3.8	6,777	8.4	80,986	100
Nursery	388	38.8	139	13.9	276	27.6	197	19.7	1,000	100
Greenhouse	271	27.6	124	12.6	459	46.7	129	13.1	983	100
Other	9,227	61.0	1,499	9.9	3,677	24.3	730	4.8	15,133	100

I_8) Have all irrigators who apply irrigation water and maintain irrigation systems received training?

Responding Growers for all Crop Types

- 72.0% (749 growers) have trained irrigators for applying irrigation water.
- 5.1% (53 growers) plan implementation within three years.
- 3.8% (40 growers) do not plan to implement this practice.
- 19.0% (198 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	749	72.0	53	5.1	40	3.8	198	19.0	1,040	100
Row Crop	221	81.3	21	7.7	8	2.9	22	8.1	272	100
Orchard	169	66.3	13	5.1	6	2.4	67	26.3	255	100
Vineyard	217	75.3	9	3.1	6	2.1	56	19.4	288	100
Nursery	34	63.0	1	1.9	4	7.4	15	27.8	54	100
Greenhouse	31	58.5	3	5.7	6	11.3	13	24.5	53	100
Other	40	61.5	5	7.7	6	9.2	14	21.5	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 87.6% (251,771 acres) have trained irrigators for applying irrigation water.
- Growers representing 4.8% (13,785 acres) plan implementation within three years.
- Growers representing 1.4% (4,087 acres) do not plan to implement this practice.
- Growers representing 6.2% (17,890 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	251,771	87.6	13,785	4.8	4,087	1.4	17,890	6.2	287,533	100
Row Crop	160,665	88.0	10,231	5.6	2,446	1.3	9,181	5.0	182,523	100
Orchard	14,341	87.0	702	4.3	331	2.0	1,101	6.6	16,475	100
Vineyard	71,314	88.1	2,149	2.6	124	0.2	7,399	9.1	80,986	100
Nursery	833	83.3	31	3.1	58	5.8	78	7.8	1,000	100
Greenhouse	792	80.6	46	4.7	70	7.1	75	7.6	983	100
Other	12,686	83.8	810	8.4	1,146	7.6	491	3.2	15,133	100

I_9) Has an irrigation mobile lab system evaluation been completed and the system been adjusted accordingly?

Responding Growers for all Crop Types

- 16.0% (166 growers) completed an irrigation mobile lab system evaluation.
- 27.0% (281 growers) plan implementation within three years.
- 38.8% (404 growers) do not plan to implement this practice.
- 18.2% (189 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	166	16.0	281	27.0	404	38.8	189	18.2	1,040	100
Row Crop	63	23.2	87	32.0	92	33.8	30	11.0	272	100
Orchard	37	14.5	75	29.4	102	40.0	41	16.1	255	100
Vineyard	38	13.2	77	26.7	121	42.0	52	18.1	288	100
Nursery	5	9.3	13	24.1	20	37.0	16	29.6	54	100
Greenhouse	4	7.5	4	7.5	21	39.6	24	45.3	53	100
Other	12	18.5	17	26.2	24	36.9	12	18.5	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 34.3% (98,763 acres) completed an irrigation mobile lab system evaluation.
- Growers representing 28.0% (80,482 acres) plan implementation within three years.
- Growers representing 23.0% (66,243 acres) do not plan to implement this practice.
- Growers representing 14.6% (30,305 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	98,763	34.3	80,482	28.0	66,243	23.0	42,045	14.6	287,533	100
Row Crop	75,159	41.2	42,239	23.1	46,073	25.2	19,052	10.4	182,523	100
Orchard	3,903	23.7	5,148	31.2	5,524	33.5	1900	11.5	16,475	100
Vineyard	23,521	29.0	24,393	30.1	12,631	15.6	20,441	25.2	80,986	100
Nursery	220	22.0	255	25.5	299	29.9	226	22.6	1,000	100
Greenhouse	97	9.9	111	11.3	367	37.3	408	41.5	983	100
Other	5,386	35.6	6,237	41.2	2,828	18.7	682	4.5	15,133	100

Erosion and Sediment Control Management

The questions for this section are listed below. The responses for all crop types to the individual questions follow in the summary graphs (refer to Figures 6 and 7). The responses by growers to each erosion and sediment control management question are outlined by major crop type along with the represented acreage.

Erosion and Sediment Control Management Questions

E_1) Are cover crops used to protect bare soil from erosion during fallow cycles and to build up solid organic matter as a crop rotation?

E_2) Are hedgerows, trees, and shrubs established along field margins or between field blocks to reduce wind effects, and protect slopes from erosion?

E_3) Are farm access roads located and graded to minimize erosion potential?

E_4) Are farm access roads protected from concentrated runoff through the use of vegetative material, gravel, and/or mulch?

E_5) Are ditches and channel banks protected from concentrated flow through the use of grassed waterway, lined channels, and/or diversions?

E_6) Are field layout and row length designed to minimize erosion potential?

E_7) Are sediment basins constructed to intercept sediment-laden runoff in locations where erosion is expected and sediment is known to leave the farm?

E_8) Are water and sediment control basins used in locations where sediment and excess runoff may cause gullies or flooding problems downstream?

E_9) Are vegetative buffers implemented between cropped areas, along the lower edge of the farm, and along roadways? (*This practice is also effective in removing nutrients and pesticides from runoff*.)

E_10) Where streams cross or property, are riparian buffers established and maintained?

E_11) Are culverts properly sized and maintained?

E_12) Are implemented management practices evaluated for effectiveness (i.e. photo-point monitoring, water quality testing)?

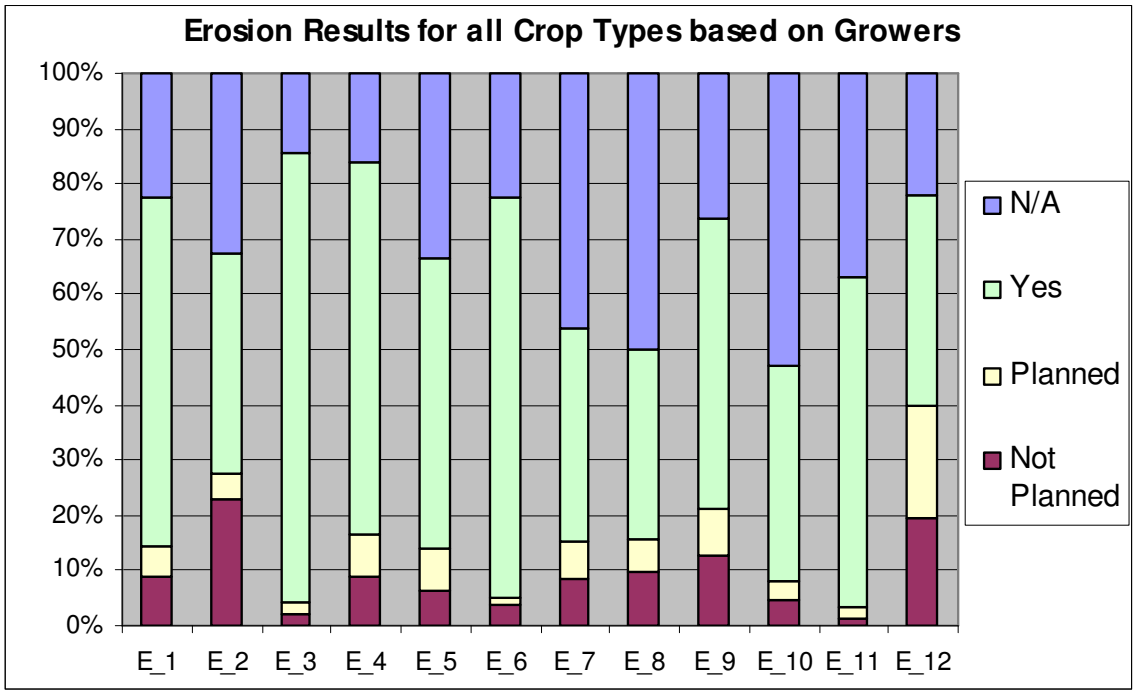

Figure 6: Level of implementation of erosion and sediment management practices for all represented growers.

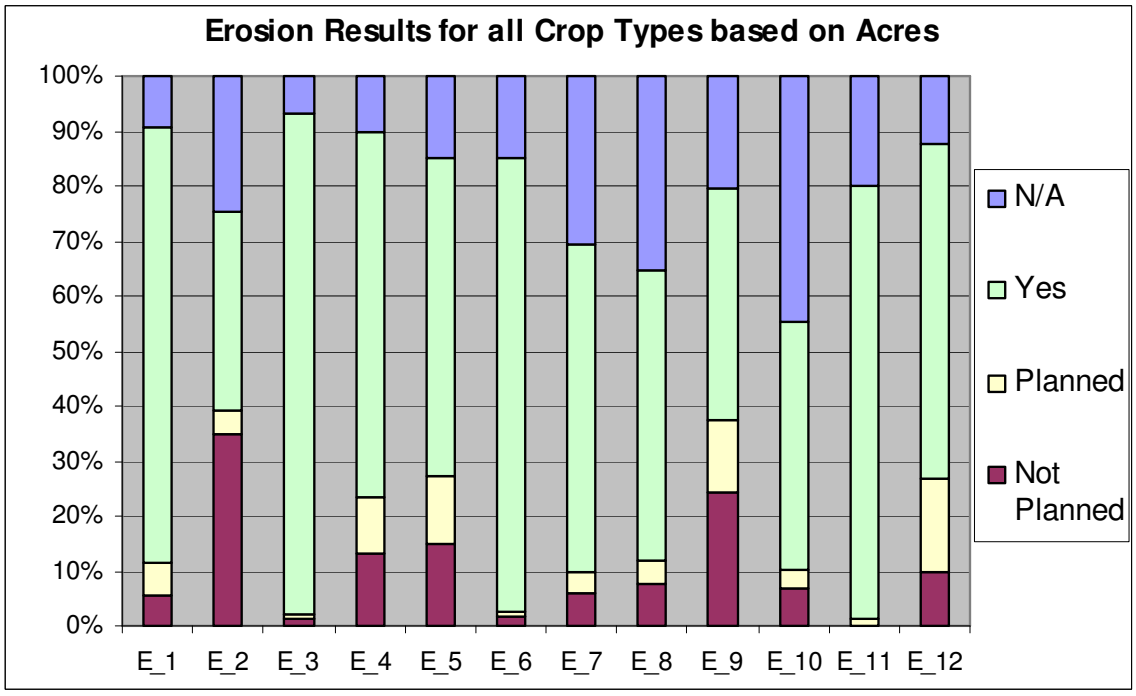

Figure 7: Level of implementation of erosion and sediment management practices for all represented acres.

E_1) Are cover crops used to protect bare soil from erosion during fallow cycles and to build up soil organic matter as a crop rotation?

Responding Growers for all Crop Types

- 63.1% (656 growers) use cover crops to protect bare soil during fallow cycles.
- 5.7% (59 growers) plan implementation within three years.
- 8.8% (92 growers) do not plan to implement this practice.
- 22.4% (233 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	656	63.1	59	5.7	92	8.8	233	22.4	1,040	100
Row Crop	191	70.2	22	8.1	27	9.9	32	11.8	272	100
Orchard	139	54.5	19	7.5	36	14.1	61	23.9	255	100
Vineyard	241	83.7	9	3.1	10	3.5	28	9.7	288	100
Nursery	12	22.2	1	1.9	3	5.6	38	70.4	54	100
Greenhouse	9	17.0	1	1.9	3	5.7	40	75.5	53	100
Other	39	60.0	5	7.7	7	10.8	14	21.5	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 79.4% (228,278 acres) use cover crops to protect bare soil during fallow cycles.
- Growers representing 5.7% (16,461 acres) plan implementation within three years.
- Growers representing 5.7% (16,464 acres) do not plan to implement this practice.
- Growers representing 9.2% (26,330 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	228,278	79.4	16,461	5.7	16,464	5.7	26,330	9.2	287,533	100
Row Crop	143,975	78.9	14,313	7.8	11,584	6.3	12,651	6.9	182,523	100
Orchard	9,145	55.5	1,335	8.1	3,761	22.8	2,234	13.6	16,475	100
Vineyard	70,313	86.8	189	0.2	746	0.9	9,738	12.0	80,986	100
Nursery	432	43.2	18	1.8	41	4.1	509	50.9	1,000	100
Greenhouse	234	23.8	64	6.5	29	3.0	656	66.7	983	100
Other	12,729	84.1	808	5.3	582	3.8	1,014	6.7	15,133	100

E_2) Are hedgerow, trees, and shrubs established along field margins or between field block to reduce wind effects and protect slopes from erosion?

Responding Growers for all Crop Types

- 40.0% (416 growers) establish hedgerows, trees, and shrubs along field margins or between field blocks.
- 4.8% (50 growers) plan implementation within three years.
- 22.7% (236 growers) do not plan to implement this practice.
- 32.5% (338 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	416	40.0	50	4.8	236	22.7	338	32.5	1,040	100
Row Crop	103	37.9	23	8.5	93	34.2	53	19.5	272	100
Orchard	108	42.4	9	3.5	45	17.6	93	36.5	255	100
Vineyard	106	36.8	11	3.8	70	24.3	101	35.1	288	100
Nursery	25	46.3	1	1.9	5	9.3	23	42.6	54	100
Greenhouse	12	22.6	1	1.9	2	3.8	38	71.7	53	100
Other	31	47.7	4	6.1	16	24.6	14	21.5	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 36.2% (104,147 acres) establish hedgerows, trees, and shrubs along field margins or between field blocks.
- Growers representing 4.4% (12,679 acres) plan implementation within three years.
- Growers representing 34.7% (99,833 acres) do not plan to implement this practice.
- Growers representing 24.6% (70,874 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	104,147	36.2	12,679	4.4	99,833	34.7	70,874	24.6	287,533	100
Row Crop	52,098	28.5	11,180	6.1	87,984	48.2	31,261	17.1	182,523	100
Orchard	5,990	36.4	285	1.7	5,402	32.8	4,798	29.1	16,475	100
Vineyard	41,252	50.9	716	0.9	8,511	10.5	30,507	37.7	80,986	100
Nursery	520	52.0	3	0.3	230	23.0	247	24.7	1,000	100
Greenhouse	348	35.4	21	2.1	54	5.5	560	57.0	983	100
Other	7,293	48.2	773	5.1	3,414	22.6	3,653	24.1	15,133	100

E_3) Are farm access roads located and graded to minimize erosion potential?

Responding Growers for all Crop Types

- 81.3% (846 growers) locate and grade farm access roads to minimize erosion potential.
- 2.2% (23 growers) plan implementation within three years.
- 2.1% (22 growers) do not plan to implement this practice.
- 14.3% (149 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	846	81.3	23	2.2	22	2.1	149	14.3	1,040	100
Row Crop	236	86.8	4	1.5	9	3.3	23	8.5	272	100
Orchard	194	76.1	7	2.7	3	1.2	51	20.0	255	100
Vineyard	249	86.5	6	2.1	4	1.4	29	10.1	288	100
Nursery	42	77.8	1	1.9	2	3.7	9	16.7	54	100
Greenhouse	33	62.3	0	0.0	1	1.9	19	35.8	53	100
Other	53	81.5	2	3.1	2	3.1	8	12.3	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 90.8% (260,944 acres) locate and grade farm access roads to minimize erosion potential.
- Growers representing 1.0% (2,851 acres) plan implementation within three years.
- Growers representing 1.3% (3,630 acres) do not plan to implement this practice..
- Growers representing 7.0% (20,108 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	260,944	90.8	2,851	1.0	3,630	1.3	20,108	7.0	287,533	100
Row Crop	169,569	92.9	2,006	1.1	1,985	1.1	8,963	4.9	182,523	100
Orchard	14,597	88.6	396	2.4	119	0.7	1,363	8.3	16,475	100
Vineyard	70,522	87.1	351	0.4	634	0.8	9,479	11.7	80,986	100
Nursery	884	88.4	2	0.2	28	2.8	86	8.6	1,000	100
Greenhouse	656	66.7	18	1.8	16	1.6	293	29.8	983	100
Other	14,465	95.6	226	1.5	36	0.2	406	2.7	15,133	100

E_4) Are farm access roads protected from concentrated runoff through the use of vegetative material, gravel, and/or mulch?

Responding Growers for all Crop Types

- 67.4% (701 growers) protect farm access roads from concentrated runoff through the use of vegetative material, gravel, and/or mulch.
- 7.5% (78 growers) plan implementation within three years.
- 8.9% (93 growers) do not plan to implement this practice.
- 16.2% (168 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	701	67.4	78	7.5	93	8.9	168	16.2	1,040	100
Row Crop	155	57.0	26	9.6	51	18.8	40	14.7	272	100
Orchard	168	65.9	21	8.2	18	7.1	48	18.8	255	100
Vineyard	224	77.8	15	5.2	13	4.5	36	12.5	288	100
Nursery	452	97.4	5	1.1	2	0.4	5	1.1	54	100
Greenhouse	28	52.8	3	5.7	2	3.8	20	37.7	53	100
Other	45	69.2	6	9.2	5	7.7	9	13.8	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 66.4% (190,907 acres) protect farm access roads from concentrated runoff through the use of vegetative material, gravel, and/or mulch.
- Growers representing 10.1% (28,906 acres) plan implementation within three years.
- Growers representing 13.3% (38,335 acres) do not plan to implement this practice.
- Growers representing 10.2% (29,385 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	190,907	66.4	28,906	10.1	38,335	13.3	29,385	10.2	287,533	100
Row Crop	110,261	60.4	21,261	11.6	34,714	19.0	16,287	8.9	182,523	100
Orchard	8,985	54.5	1,181	7.2	4,556	27.7	1,753	10.6	16,475	100
Vineyard	66,499	82.1	3,873	4.8	758	0.9	9,856	12.2	80,986	100
Nursery	838	83.8	63	6.3	25	2.5	74	7.4	1,000	100
Greenhouse	561	57.1	74	7.5	100	10.2	248	25.2	983	100
Other	12,592	83.2	1,736	11.5	289	1.9	516	3.4	15,133	100

E_5) Are ditches and channel banks protected from concentrated flow through the use of grassed waterways, lined channels, and/or diversions?

Responding Growers for all Crop Types

- 52.5% (546 growers) protect ditches and channel banks from concentrated flows through the use of grassed waterways and lined channels.
- 7.7% (80 growers) plan implementation within three years.
- 6.4% (67 growers) do not plan to implement this practice.
- 33.4% (347 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	546	52.5	80	7.7	67	6.4	347	33.4	1,040	100
Row Crop	149	54.8	34	12.5	40	14.7	49	18.0	272	100
Orchard	121	47.5	17	6.7	10	3.9	107	42.0	255	100
Vineyard	173	60.1	8	2.8	7	2.4	100	34.7	288	100
Nursery	24	44.4	9	16.7	4	7.4	17	31.5	54	100
Greenhouse	19	35.8	5	9.4	4	7.5	25	47.2	53	100
Other	33	50.8	5	7.7	1	1.5	26	40.0	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 57.6% (165,546 acres) protect ditches and channel banks from concentrated flows through the use of grassed waterways and lined channels.
- Growers representing 12.5% (35,950 acres) plan implementation within three years.
- Growers representing 14.9% (42,723 acres) do not plan to implement this practice.
- Growers representing 15.1% (43,314 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	165,546	57.6	35,950	12.5	42,723	14.9	43,314	15.1	287,533	100
Row Crop	92,462	50.7	24,534	13.4	43,310	23.7	22,217	12.2	182,523	100
Orchard	8,120	49.3	1,652	10.0	2,621	15.9	4,082	24.8	16,475	100
Vineyard	59,733	73.8	3,642	4.5	285	0.4	17,326	21.4	80,986	100
Nursery	377	37.7	208	20.8	45	4.5	370	37.0	1,000	100
Greenhouse	446	45.4	100	10.2	68	6.9	369	37.5	983	100
Other	8091	53.5	4,043	26.7	895	5.9	2,104	13.9	15,133	100

E_6) Are field layout and row length designed to minimize erosion potential?

Responding Growers for all Crop Types

- 72.7% (756 growers) design field layout and row length to minimize erosion potential.
- 1.3% (14 growers) plan implementation within three years.
- 3.7% (38 growers) do not plan to implement this practice.
- 22.3% (232 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	756	72.7	14	1.3	38	3.7	232	22.3	1,040	100
Row Crop	235	86.4	3	1.1	5	1.8	29	10.7	272	100
Orchard	176	69.0	6	2.4	8	3.1	65	25.5	255	100
Vineyard	220	76.4	2	0.7	19	6.6	47	16.3	288	100
Nursery	29	53.7	1	1.9	2	3.7	22	40.7	54	100
Greenhouse	15	28.3	2	3.8	0	0.0	36	67.9	53	100
Other	48	73.8	0	0.0	1	1.5	16	24.6	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 82.8% (237,955 acres) design field layout and row length to minimize erosion potential.
- Growers representing 1.0% (2,850 acres) plan implementation within three years.
- Growers representing 1.5% (4,440 acres) do not plan to implement this practice.
- Growers representing 14.7% (42,288 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	237,955	82.8	2,850	1.0	4,440	1.5	42,288	14.7	287,533	100
Row Crop	166,158	91.0	1,623	0.9	1,569	0.9	13,173	7.2	182,523	100
Orchard	12,148	73.7	155	0.9	438	2.7	3,734	22.7	16,475	100
Vineyard	53,734	66.3	1,120	1.4	2,187	2.7	23,945	29.6	80,986	100
Nursery	679	67.9	20	2.0	34	3.4	267	26.7	1,000	100
Greenhouse	463	47.1	17	1.7	10	1.0	493	50.2	983	100
Other	13,657	90.2	0	0.0	118	0.8	1,358	9.0	15,133	100

E_7) Are sediment basins constructed to intercept sediment-laden runoff in locations where erosion is expected and sediment is known to leave the farm?

Responding Growers for all Crop Types

- 38.8% (403 growers) construct sediment basins to intercept sediment-laden runoff in locations where erosion is expected.
- 6.7% (70 growers) plan implementation within three years.
- 8.4% (87 growers) do not plan to implement this practice.
- 46.2% (480 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	403	38.8	70	6.7	87	8.4	480	46.2	1,040	100
Row Crop	143	52.6	20	7.4	25	9.2	84	30.9	272	100
Orchard	77	30.2	21	8.2	25	9.8	132	51.8	255	100
Vineyard	106	36.8	11	3.8	25	8.7	146	50.7	288	100
Nursery	17	31.5	8	14.8	4	7.4	25	46.3	54	100
Greenhouse	14	26.4	5	9.4	2	3.8	32	60.4	53	100
Other	29	44.6	1	1.5	3	4.6	32	49.2	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 59.4% (170,694 acres) construct sediment basins to intercept sediment-laden runoff in locations where erosion is expected.
- Growers representing 3.9% (11,249 acres) plan implementation within three years.
- Growers representing 6.1% (17,635 acres) do not plan to implement this practice.
- Growers representing 30.6% (87,955 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	170,694	59.4	11,249	3.9	17,635	6.1	87,955	30.6	287,533	100
Row Crop	117,466	64.4	6,960	3.8	13,047	7.1	45,050	24.7	182,523	100
Orchard	7,378	44.8	1,949	11.8	1,668	10.1	5,480	33.3	16,475	100
Vineyard	35,996	44.4	1,642	2.0	3,962	4.9	39,386	48.6	80,986	100
Nursery	473	47.3	140	14.0	67	6.7	320	32.0	1,000	100
Greenhouse	404	41.1	56	5.7	106	10.8	417	42.4	983	100
Other	11,922	78.8	699	4.6	482	3.2	2,030	13.4	15,133	100

E_8) Are water and sediment control basins used in locations where sediment and excess runoff may cause gullies or flooding problems downstream?

Responding Growers for all Crop Types

- 34.2% (356 growers) use water and sediment control basins in locations where runoff may cause gullies or flooding downstream.
- 6.0% (62 growers) plan implementation within three years.
- 9.6% (100 growers) do not plan to implement this practice.
- 50.2% (522 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	356	34.2	62	6.0	100	9.6	522	50.2	1,040	100
Row Crop	125	46.0	15	5.5	27	9.9	105	38.6	272	100
Orchard	69	27.1	20	7.8	27	10.6	139	54.5	255	100
Vineyard	97	33.7	14	4.9	26	9.0	151	52.4	288	100
Nursery	14	25.9	7	13.0	4	7.4	29	53.7	54	100
Greenhouse	11	20.8	3	5.7	4	7.5	35	66.0	53	100
Other	22	33.8	1	1.5	8	12.3	34	52.3	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 52.8% (151,901 acres) use water and sediment control basins in locations where runoff may cause gullies or flooding downstream.
- Growers representing 4.4% (12,609 acres) plan implementation within three years.
- Growers representing 7.5% (21,481 acres) do plan to implement this practice.
- Growers representing 35.3% (101,542 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	151,901	52.8	12,609	4.4	21,481	7.5	101,542	35.3	287,533	100
Row Crop	97,058	53.2	8,872	4.9	13,566	7.4	63,027	34.5	182,523	100
Orchard	6,155	37.4	1,541	9.4	2,879	17.5	5,900	35.8	16,475	100
Vineyard	39,283	48.5	1,776	2.2	4,162	5.1	35,765	44.2	80,986	100
Nursery	378	37.8	108	10.8	64	6.4	450	45.0	1,000	100
Greenhouse	346	35.2	19	1.9	90	9.2	528	53.7	983	100
Other	9,543	63.1	505	3.3	2,254	14.9	2,831	18.7	15,133	100

E_9) Are vegetative buffers implemented between cropped areas, along the lower edge of the farm, and along roadways?

Responding Growers for all Crop Types

- 52.4% (545 growers) implement vegetative buffers between cropped areas, along the lower edge of the farm, and along roadways.
- 8.5% (88 growers) plan implementation within three years.
- 12.9% (134 growers) do not plan to implement this practice.
- 26.3% (273 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	545	52.4	88	8.5	134	12.9	273	26.3	1,040	100
Row Crop	123	45.2	33	12.1	65	23.9	51	18.8	272	100
Orchard	130	51.0	25	9.8	28	11.0	72	28.2	255	100
Vineyard	192	66.7	18	6.3	20	6.9	58	20.1	288	100
Nursery	24	44.4	5	9.3	6	11.1	19	35.2	54	100
Greenhouse	15	28.3	0	0.0	6	11.3	32	60.4	53	100
Other	31	47.7	5	7.7	7	10.8	22	33.8	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 41.9% (120,405 acres) implement vegetative buffers between cropped areas, along the lower edge of the farm, and along roadways.
- Growers representing 13.4% (38,461 acres) plan implementation within three years.
- Growers representing 24.2% (67,710 acres) do not plan to implement this practice.
- Growers representing 20.5% (58,957 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	120,405	41.9	38,461	13.4	69,710	24.2	58,957	20.5	287,533	100
Row Crop	56,920	31.2	24,338	13.3	63,202	34.6	38,063	20.9	182,523	100
Orchard	8,362	50.8	3,161	19.2	2,637	16.0	2,315	14.1	16,475	100
Vineyard	45,383	56.0	11,109	13.7	6,677	8.2	17,817	22.0	80,986	100
Nursery	525	52.5	49	4.9	86	8.6	340	34.0	1,000	100
Greenhouse	258	26.2	23	2.3	141	14.3	561	57.1	983	100
Other	10,064	66.5	389	2.6	3,110	20.6	1,570	10.4	15,133	100

E_10) Where streams cross or border property, are riparian buffers established and maintained?

Responding Growers for all Crop Types

- 38.9% (405 growers) established and maintain riparian buffers where streams cross or border property.
- 3.6% (37 growers) plan implementation within three years.
- 4.5% (47 growers) do not plan to implement this practice.
- 53.0% (551 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	405	38.9	37	3.6	47	4.5	551	53.0	1,040	100
Row Crop	113	41.5	13	4.8	17	6.3	129	47.4	272	100
Orchard	103	40.4	11	4.3	11	4.3	130	51.0	255	100
Vineyard	118	41.0	4	1.4	10	3.5	156	54.2	288	100
Nursery	16	29.6	2	3.7	2	3.7	34	63.0	54	100
Greenhouse	11	20.8	2	3.8	4	7.5	36	67.9	53	100
Other	26	40.0	4	6.2	2	3.1	33	50.8	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 45.1% (129,769 acres) established and maintain riparian buffers where streams cross or border property.
- Growers representing 3.3% (9,480 acres) plan implementation within three years.
- Growers representing 6.8% (19,482 acres) do not plan to implement this practice.
- Growers representing 44.8% (128,802 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	129,769	45.1	9,480	3.3	19,482	6.8	128,802	44.8	287,533	100
Row Crop	89,435	49.0	1,987	1.1	14,852	8.1	76,249	41.8	182,523	100
Orchard	9,428	57.2	630	3.8	1,781	10.8	4,636	28.1	16,475	100
Vineyard	27,126	33.5	6,621	8.2	1,805	2.2	45,434	56.1	80,986	100
Nursery	522	52.2	21	2.1	26	2.6	431	43.1	1,000	100
Greenhouse	168	17.1	56	5.7	20	2.0	739	75.2	983	100
Other	6,998	46.2	412	2.7	649	4.3	7,074	46.7	15,133	100

E_11) Are culverts properly sized and maintained?

Responding Growers for all Crop Types

- 59.6% (620 growers) properly size and maintain culverts.
- 2.5% (26 growers) plan implementation within three years.
- 1.1% (11 growers) do not plan to implement this practice.
- 36.8% (383 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	620	59.6	26	2.5	11	1.1	383	36.8	1,040	100
Row Crop	194	71.3	7	2.6	2	0.7	69	25.4	272	100
Orchard	132	51.8	7	2.7	4	1.6	112	43.9	255	100
Vineyard	177	61.5	2	0.7	2	0.7	107	37.2	288	100
Nursery	30	55.6	4	7.4	1	1.9	19	35.2	54	100
Greenhouse	21	39.6	2	3.8	2	3.8	28	52.8	53	100
Other	38	58.5	3	4.6	0	0.0	24	36.9	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 78.5% (225,636 acres) properly size and maintain culverts.
- Growers representing 1.2% (3,561 acres) plan implementation within three years.
- Growers representing 0.1% (386 acres) do not plan to implement this practice.
- Growers representing 20.2% (57,950 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	225,636	78.5	3,561	1.2	386	0.1	57,950	20.2	287,533	100
Row Crop	147,652	80.9	2,740	1.5	87	0.05	32,044	17.6	182,523	100
Orchard	11,855	72.0	177	1.1	55	0.3	4,388	26.6	16,475	100
Vineyard	59,519	73.5	35	0.04	204	0.3	21,228	26.2	80,986	100
Nursery	773	77.3	50	5.0	24	2.4	153	15.3	1,000	100
Greenhouse	534	54.3	25	2.5	16	1.6	408	41.5	983	100
Other	12,304	81.3	453	3.0	0	0.0	2,376	15.7	15,133	100

E_12) Are implemented management practices evaluated for effectiveness (i.e. photo-point monitoring, water quality testing)?

Responding Growers for all Crop Types

- 38.4% (399 growers) evaluate implemented management practices for effectiveness.
- 20.2% (210 growers) plan implementation within three years.
- 19.5% (203 growers) do not plan to implement this practice.
- 21.9% (228 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	399	38.4	210	20.2	203	19.5	228	21.9	1,040	100
Row Crop	130	47.8	60	22.1	46	16.9	36	13.2	272	100
Orchard	78	30.6	56	22.0	57	22.4	64	25.1	255	100
Vineyard	111	38.5	59	20.5	51	17.7	67	23.3	288	100
Nursery	20	37.0	11	20.4	12	22.2	11	20.4	54	100
Greenhouse	18	34.0	4	7.5	13	24.5	18	34.0	53	100
Other	20	30.8	12	18.5	13	20.0	20	30.8	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 60.8% (174,835 acres) evaluate implemented management practices for effectiveness.
- Growers representing 17.1% (49,256 acres) plan implementation within three years.
- Growers representing 9.6% (27,535 acres) do not plan to implement this practice.
- Growers representing 12.5% (35,907 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	174,835	60.8	49,256	17.1	27,535	9.6	35,907	12.5	287,533	100
Row Crop	119,784	65.6	30,234	16.6	9,733	5.3	22,772	12.5	182,523	100
Orchard	6,556	39.8	3,833	23.3	2,756	16.7	3,330	20.2	16,475	100
Vineyard	42,025	51.9	14,801	18.3	12,574	15.5	11,586	14.3	80,986	100
Nursery	451	45.1	310	31.0	138	13.8	101	10.1	1,000	100
Greenhouse	388	39.5	112	11.4	192	19.5	291	29.6	983	100
Other	9,436	62.4	1,831	12.1	1,702	11.2	2,164	14.3	15,133	100

Nutrient Management

The questions for this section are listed below. The responses for all crop types to the individual questions follow in the summary graphs (refer to Figures 8 and 9). The responses by growers to each nutrient management question are outlined by major crop type along with the represented acreage.

Nutrient Management Questions

N_1) Are the crop's nutrient requirements known and are nutrient budgets established and recorded?

N_2) Do you test irrigation water for nitrogen content and incorporate that information into your fertilization program?

N_3) Is plant tissue analysis used to aid in fertilizer decisions?

N_4) Do you test your soil for residual nitrogen and incorporate that information into your fertilization program?

N_5) If fertigation is used, are measures in place to ensure that there is no backflow into wells or other water sources?

N_6) Do you regularly maintain and calibrate your fertilizer equipment?

N_7) Do field personnel receive nutrient management training?

N_8) Do fertilizer storage facilities include concrete pads and curbs for containment of spills and are they protected from weather?

N_9) Is mixing and loading performed on sites with low runoff hazard, over 100' down slope of wells?

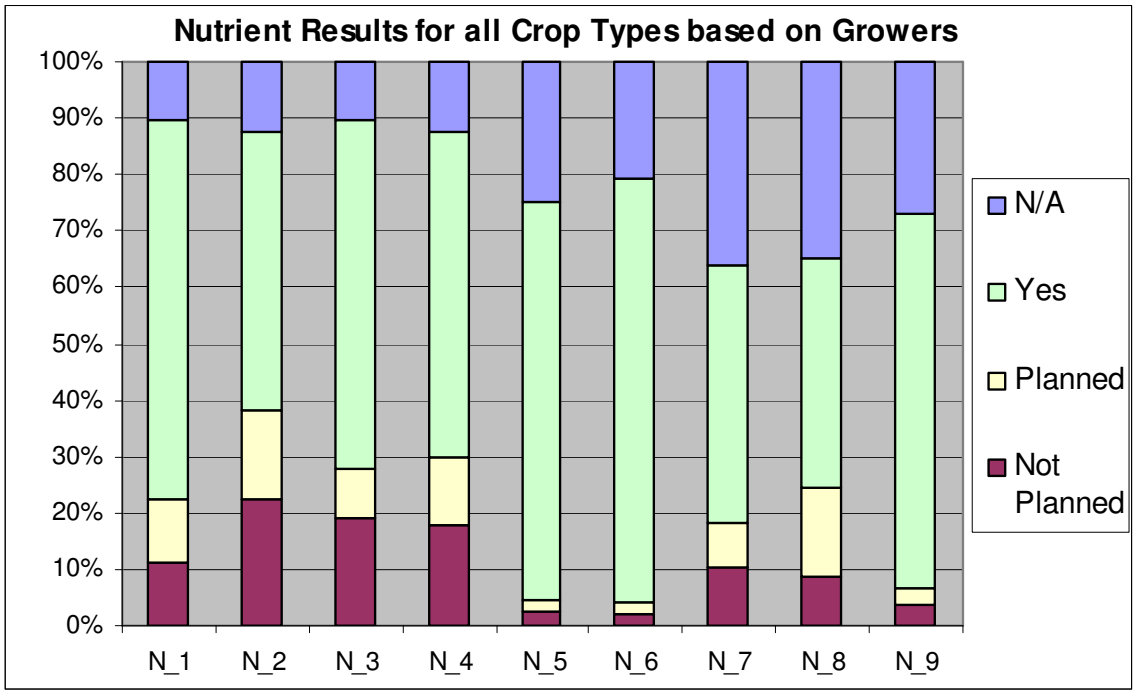

Figure 8: Level of implementation of nutrient management practices for all represented growers.

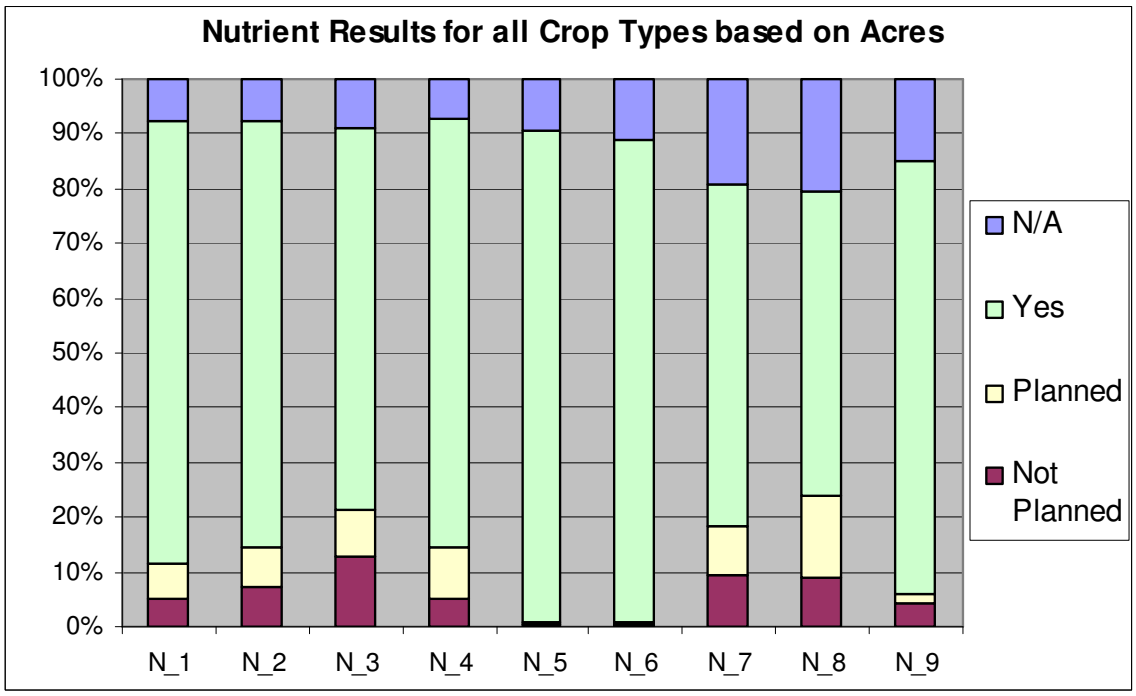

Figure 9: Level of implementation of nutrient management practices for all represented acres.

N_1) Are the crop's nutrient requirements known and are nutrient budgets established and recorded?

Responding Growers for all Crop Types

- 67.4% (701 growers) know crop nutrient requirements and nutrient budgets are established and recorded.
- 11.2% (116 growers) plan implementation within three years.
- 11.2% (116 growers) do not plan to implement this practice.
- 10.3% (107 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	701	67.4	116	11.2	116	11.2	107	10.3	1,040	100
Row Crop	191	70.2	31	11.4	29	10.7	21	7.7	272	100
Orchard	168	65.9	29	11.4	32	12.5	26	10.2	255	100
Vineyard	220	76.4	26	9.0	13	4.5	29	10.1	288	100
Nursery	32	59.3	5	9.3	12	22.2	5	9.3	54	100
Greenhouse	27	50.9	5	9.4	9	17.0	12	22.6	53	100
Other	33	50.8	13	20.0	12	18.5	7	10.8	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 80.9% (232,540 acres) know crop nutrient requirements and nutrient budgets are established and recorded.
- Growers representing 6.5% (18,579 acres) plan implementation within three years.
- Growers representing 5.0% (14,307 acres) do not plan to implement this practice.
- Growers representing 7.7% (22,107 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	232,540	80.9	18,579	6.5	14,307	5.0	22,107	7.7	287,533	100
Row Crop	145,157	79.5	14,450	7.9	11,974	6.6	10,942	6.0	182,523	100
Orchard	13,581	82.4	846	5.1	1,424	8.6	624	3.8	16,475	100
Vineyard	68,268	84.3	2,731	3.4	414	0.5	9,573	11.8	80,986	100
Nursery	741	74.1	76	7.6	153	15.3	30	3.0	1,000	100
Greenhouse	665	67.7	45	4.6	88	9.0	185	18.8	983	100
Other	11,431	75.5	2,163	14.3	645	4.3	894	5.9	15,133	100

N_2) Do you test irrigation water for nitrogen content and incorporate that information into your fertilization program?

Responding Growers for all Crop Types

- 49.3% (513 growers) test irrigation water for nitrogen content and information is incorporated into fertilization program.
- 6.0% (166 growers) plan implementation within three years.
- 22.3% (232 growers) do not plan to implement this practice.
- 12.4% (129 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	513	49.3	166	16.0	232	22.3	129	12.4	1,040	100
Row Crop	166	61.0	40	14.7	40	14.7	26	9.6	272	100
Orchard	99	38.8	52	20.4	69	27.1	35	13.7	255	100
Vineyard	146	50.7	43	14.9	69	24.0	30	10.4	288	100
Nursery	25	46.3	5	9.3	14	25.9	10	18.5	54	100
Greenhouse	28	52.8	4	7.5	8	15.1	13	24.5	53	100
Other	22	33.8	15	23.1	19	29.2	9	13.8	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 78.1% (224,550 acres) test irrigation water for nitrogen content and information is incorporated into fertilization program.
- Growers representing 7.3% (21,058 acres) plan implementation within three years.
- Growers representing 7.1% (20,406 acres) do not plan to implement this practice.
- Growers representing 7.5% (21,519 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	224,550	78.1	21,058	7.3	20,406	7.1	21,519	7.5	287,533	100
Row Crop	147,227	80.7	11,615	6.4	13,789	7.6	9,892	5.4	182,523	100
Orchard	9,978	60.6	2,903	17.6	1,885	11.4	1,709	10.4	16,475	100
Vineyard	61,248	75.6	6,009	7.4	4,138	5.1	9,591	11.8	80,986	100
Nursery	615	61.5	219	21.9	105	10.5	61	6.1	1,000	100
Greenhouse	614	62.5	42	4.3	92	9.4	235	23.9	983	100
Other	11,992	79.2	1,205	8.0	1,101	7.3	835	5.5	15,133	100

N_3) Is plant tissue analysis used to aid in fertilizer decisions?

Responding Growers for all Crop Types

- 62.0% (645 growers) use plant tissue analysis to aid in fertilizer decisions.
- 8.8% (92 growers) plan implementation within three years.
- 18.9% (197 growers) do not plan to implement this practice.
- 10.2% (106 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	645	62.0	92	8.8	197	18.9	106	10.2	1,040	100
Row Crop	145	53.3	34	12.5	69	25.4	24	8.8	272	100
Orchard	167	65.5	24	9.4	40	15.7	24	9.4	255	100
Vineyard	237	82.3	14	4.9	11	3.8	26	9.0	288	100
Nursery	17	31.5	4	7.4	25	46.3	8	14.8	54	100
Greenhouse	24	45.3	3	5.7	14	26.4	12	22.6	53	100
Other	24	36.9	11	16.9	23	35.4	7	10.8	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 69.3% (119,183 acres) use plant tissue analysis to aid in fertilizer decisions.
- Growers representing 8.7% (25,114 acres) plan implementation within three years.
- Growers representing 12.8% (36,930 acres) do not plan to implement this practice.
- Growers representing 9.1% (26,306 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	199,183	69.3	25,114	8.7	36,930	12.8	26,306	9.1	287,533	100
Row Crop	111,263	61.0	18,902	10.4	36,664	20.1	15,694	8.6	182,523	100
Orchard	13,639	82.8	1,099	6.7	1,033	6.3	704	4.3	16,475	100
Vineyard	70,858	87.5	208	0.3	398	0.5	9,522	11.8	80,986	100
Nursery	638	63.8	91	9.1	206	20.6	65	6.5	1,000	100
Greenhouse	597	60.7	36	3.7	144	14.6	206	21.0	983	100
Other	7,239	47.8	5,012	33.1	2,303	15.2	579	3.8	15,133	100

N_4) Do you test your soil for residual nitrogen and incorporate that information into your fertilization program?

Responding Growers for all Crop Types

- 57.8% (601 growers) test soil for residual nitrogen and information is incorporated into fertilization program.
- 12.1% (126 growers) plan implementation within three years.
- 17.7% (184 growers) do not plan to implement this practice.
- 12.4% (129 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	601	57.8	126	12.1	184	17.7	129	12.4	1,040	100
Row Crop	191	70.2	29	10.7	29	10.7	23	8.5	272	100
Orchard	129	50.6	41	16.1	58	22.7	27	10.6	255	100
Vineyard	171	59.4	41	14.2	43	14.9	33	11.5	288	100
Nursery	24	44.4	1	1.9	13	24.1	16	29.6	54	100
Greenhouse	23	43.4	5	9.4	9	17.0	16	30.2	53	100
Other	33	50.8	7	10.8	19	29.2	6	9.2	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 78.2% (224,829 acres) test soil for residual nitrogen and information is incorporated into fertilization program.
- Growers representing 9.3% (26,683 acres) plan implementation within three years.
- Growers representing 5.2% (14,841 acres) do not plan to implement this practice.
- Growers representing 7.4% (21,180 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	224,829	78.2	26,683	9.3	14,841	5.2	21,180	7.4	287,533	100
Row Crop	152,883	83.8	10,010	5.5	11,362	6.2	8,268	4.5	182,523	100
Orchard	10,773	65.4	3,441	20.9	1,440	8.7	821	5.0	16,475	100
Vineyard	56,394	69.6	11,860	14.6	1,416	1.7	11,316	14.0	80,986	100
Nursery	430	43.0	64	6.4	126	12.6	380	38.0	1,000	100
Greenhouse	520	52.9	35	3.6	97	9.9	331	33.7	983	100
Other	12,553	83.0	887	5.9	1,152	7.6	541	3.6	15,133	100

N_5) If fertigation is used, are measures in place to ensure that there is no backflow into wells or other water sources?

Responding Growers for all Crop Types

- 70.7% (735 growers) have measures in place to ensure that there is no backflow into water sources, if fertigation is used.
- 2.2% (23 growers) plan implementation within three years.
- 2.3% (24 growers) do not plan to implement this practice.
- 24.8% (258 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	735	70.7	23	2.2	24	2.3	258	24.8	1,040	100
Row Crop	227	83.5	6	2.2	6	2.2	33	12.1	272	100
Orchard	151	59.2	7	2.7	8	3.1	89	34.9	255	100
Vineyard	226	78.5	3	1.0	3	1.0	56	19.4	288	100
Nursery	29	53.7	1	1.9	1	1.9	23	42.6	54	100
Greenhouse	32	60.4	2	3.8	1	1.9	18	34.0	53	100
Other	35	53.8	1	1.5	3	4.6	26	40.0	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 89.6% (257,608 acres) have measures in place to ensure that there is no backflow into water sources, if fertigation is used.
- Growers representing 0.4% (1,229 acres) plan implementation within three years.
- Growers representing 0.4% (1,273 acres) do not plan to implement this practice.
- Growers representing 9.5% (27,423 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	257,608	89.6	1,229	0.4	1,273	0.4	27,423	9.5	287,533	100
Row Crop	169,798	93.0	1,118	0.6	458	0.3	11,149	6.1	182,523	100
Orchard	12,388	75.2	133	0.8	576	3.5	3,378	20.5	16,475	100
Vineyard	70,178	86.7	87	0.1	202	0.2	10,519	13.0	80,986	100
Nursery	721	72.1	5	0.5	24	2.4	250	25.0	1,000	100
Greenhouse	624	63.5	5	0.5	17	1.7	337	34.3	983	100
Other	11,948	78.9	10	0.07	351	2.3	2,824	18.7	15,133	100

N_6) Do you regularly maintain and calibrate your fertilizer equipment?

Responding Growers for all Crop Types

- 74.9% (779 growers) regularly calibrate and maintain fertilizer equipment.
- 2.3% (24 growers) plan implementation within three years.
- 1.9% (20 growers) do not plan to implement this practice.
- 20.9% (217 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	779	74.9	24	2.3	20	1.9	217	20.9	1,040	100
Row Crop	219	80.5	5	1.8	3	1.1	45	16.5	272	100
Orchard	173	67.8	5	2.0	8	3.1	69	27.1	255	100
Vineyard	226	78.5	7	2.4	1	0.3	54	18.8	288	100
Nursery	41	75.9	1	1.9	1	1.9	11	20.4	54	100
Greenhouse	37	69.8	3	5.7	1	1.9	12	22.6	53	100
Other	45	69.2	3	4.6	3	4.6	14	21.5	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 88.0% (253,010 acres) regularly calibrate and maintain fertilizer equipment.
- Growers representing 0.4% (1,033 acres) plan implementation within three years.
- Growers representing 0.4% (1,155 acres) do not plan to implement this practice.
- Growers representing 11.2% (32,335 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	253,010	88.0	1,033	0.4	1,155	0.4	32,335	11.2	287,533	100
Row Crop	161,439	88.4	512	0.3	790	0.4	19,782	10.8	182,523	100
Orchard	14,434	87.6	164	1.0	305	1.9	1,572	9.5	16,475	100
Vineyard	70,433	87.0	97	0.1	13	0.0	10,443	12.9	80,986	100
Nursery	932	93.2	1	0.1	9	0.9	58	5.8	1,000	100
Greenhouse	787	80.1	12	1.2	16	1.6	168	17.1	983	100
Other	13,149	86.9	455	3.0	23	0.2	1,506	10.0	15,133	100

N_7) Do field personnel receive nutrient management training?

Responding Growers for all Crop Types

- 45.6% (474 growers) have field personnel who received nutrient management training.
- 8.1% (84 growers) plan implementation within three years.
- 10.2% (106 growers) do not plan on implementing this practice.
- 36.2% (376 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	474	45.6	84	8.1	106	10.2	376	36.2	1,040	100
Row Crop	146	53.7	31	11.4	33	12.1	62	22.8	272	100
Orchard	98	38.4	16	6.3	19	7.5	122	47.8	255	100
Vineyard	140	48.6	19	6.6	19	6.6	110	38.2	288	100
Nursery	23	42.6	4	7.4	12	22.2	15	27.8	54	100
Greenhouse	22	41.5	4	7.6	7	13.2	20	37.7	53	100
Other	19	29.2	9	13.8	11	16.9	26	40.0	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 62.6% (179,901 acres) have field personnel who received nutrient management training.
- Growers representing 8.7% (24,886 acres) plan implementation within three years.
- Growers representing 9.6% (27,659 acres) do not plan to implement this practice.
- Growers representing 19.2% (55,087 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	179,901	62.6	24,886	8.7	27,659	9.6	55,087	19.2	287,533	100
Row Crop	122,853	67.3	9,873	5.4	17,768	9.7	32,029	17.5	182,523	100
Orchard	10,529	63.9	1,518	9.2	1,194	7.2	3,234	19.6	16,475	100
Vineyard	42,452	52.4	9095	11.2	7,011	8.7	22,428	27.7	80,986	100
Nursery	577	57.7	26	2.6	308	30.8	89	8.9	1,000	100
Greenhouse	542	55.1	66	6.7	102	10.4	273	27.8	983	100
Other	5,895	39.0	4161	27.5	2,658	17.6	2,419	16.0	15,133	100

N_8) Do fertilizer storage facilities include concrete pads and curbs for containment of spills and are they protected from weather?

Responding Growers for all Crop Types

- 40.8% (424 growers) have fertilizer storage facilities that include concrete pads and curbs for containment of spills and protection from weather.
- 15.6% (162 growers) plan implementation within three years.
- 8.7% (90 growers) do not plan to implement this practice.
- 35.0% (364 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	424	40.8	162	15.6	90	8.7	364	35.0	1,040	100
Row Crop	119	43.8	40	14.7	25	9.2	88	32.4	272	100
Orchard	91	35.7	43	16.9	31	12.2	90	35.3	255	100
Vineyard	104	36.1	44	15.3	20	6.9	120	41.7	288	100
Nursery	33	61.1	5	9.3	4	7.4	12	22.2	54	100
Greenhouse	31	58.5	10	18.9	1	1.9	11	20.8	53	100
Other	23	35.4	10	15.4	7	10.8	25	38.5	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 55.4% (159,229 acres) have fertilizer storage facilities that include concrete pads and curbs for containment of spills and protection from weather.
- Growers representing 14.9% (42,901 acres) plan implementation within three years.
- Growers representing 9.0% (25,968 acres) do not plan to implement this practice.
- Growers representing 20.7% (59,435 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	159,229	55.4	42,901	14.9	25,968	9.0	59,435	20.7	287,533	100
Row Crop	113,702	62.3	24,387	13.4	11,280	6.2	33,154	18.2	182,523	100
Orchard	6,487	39.4	3,490	21.2	1,908	11.6	4,590	27.9	16,475	100
Vineyard	34,075	42.1	13,075	16.1	14,177	17.5	19,659	24.3	80,986	100
Nursery	615	61.5	127	12.7	42	4.2	216	21.6	1,000	100
Greenhouse	462	47.0	270	27.5	72	7.3	179	18.2	983	100
Other	8,971	59.3	2,079	13.7	1,635	10.8	2,448	16.2	15,133	100

N_9) Is mixing and loading performed on sites with low runoff hazard, over 100' downslope of wells?

Responding Growers for all Crop Types

- 66.2% (688 growers) perform mixing and loading on sites with low runoff hazard, over 100' downslope of wells.
- 3.0% (31 growers) plan implementation within three years.
- 3.8% (39 growers) do not plan to implement this practice.
- 27.1% (282 growers) replied N/A.

Responding Growers	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Responses	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	688	66.2	31	3.0	39	3.8	282	27.1	1,040	100
Row Crop	197	72.4	9	3.3	14	5.1	52	19.1	272	100
Orchard	145	56.9	9	3.5	7	2.7	94	36.9	255	100
Vineyard	202	70.1	7	2.4	8	2.8	71	24.7	288	100
Nursery	35	64.8	0	0.0	3	5.6	16	29.6	54	100
Greenhouse	28	52.8	3	5.7	4	7.5	18	34.0	53	100
Other	42	64.6	3	4.6	1	1.5	19	29.2	65	100

Represented Irrigated Acreage for all Crop Types

- Growers representing 79.1% (227,353 acres) perform mixing and loading on sites with low runoff hazard, over 100' down slope of wells.
- Growers representing 1.4% (4,035 acres) plan implementation within three years.
- Growers representing 4.4% (12,615 acres) do not plan to implement this practice.
- Growers representing 15.1% (43,530 acres) replied N/A.

Represented Acres	Level of Implementation									
	Yes, implemented		No, but planned in 3 years		No, and not planned		Not applicable		Total Acres	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
All Crop Types	227,353	79.1	4,035	1.4	12,615	4.4	43,530	15.1	287,533	100
Row Crop	154,679	84.7	795	0.4	5,941	3.3	21,108	11.6	182,523	100
Orchard	11,659	70.8	1,146	7.0	324	2.0	3,346	20.3	16,475	100
Vineyard	55,932	69.1	1,561	1.9	5,646	7.0	17,847	22.0	80,986	100
Nursery	701	70.1	0	0.0	43	4.3	256	25.6	1,000	100
Greenhouse	639	65.0	100	10.2	32	3.3	212	21.6	983	100
Other	13,027	86.1	300	2.0	35	0.2	1,771	11.7	15,133	100

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Central Coast Water Board

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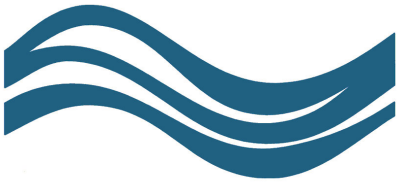
Executive Management

Roger W. Briggs – Executive Officer
Michael Thomas – Assistant Executive Officer CEA II

Summary Report Team

Alison Jones – Staff Environmental Scientist
Peter Meertens – Environmental Scientist
Elaine Sahl – Environmental Scientist
Jeremy Farr – Student Assistant



Central Coast
Water Board